DOCUMENT RESUME

ED 127 078 RC 009 357

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TITLE Impact: The Effects of a Rich Information Resource on Alaskan Eskimo Students and Their Teachers. An Evaluation of the Bethel Regional Library/Media Center.
INSTITUTION Bureau of Indian Affairs (Dept. of Interior), Bethel, Alaska. Bethel Agency Office.
PUB DATE Mar 76
NOTE 253p.

EDRS PRICE MF-$0.83 HC-$14.05 Plus Postage.
DESCRIPTORS Academic Achievement; Alaska Natives; Cloze Procedure; Comparative Analysis; *Elementary School Students; Elementary School Teachers; *Eskimos; *Instructional Materials Centers; Library Materials; *Library Services; National Norms; *Program Evaluation; Questionnaires; Reading; *Use Studies
IDENTIFIERS Alaska (Southwest); *Bethel Alaska Regional Library Media Center; Metropolitan Achievement Test

ABSTRACT

Evaluation objectives were to assess the quality of the Bethel Alaska Regional Library/Media Center as an exemplary operation (the Center was established by the Bureau of Indian Affairs' Bethel Agency in 1971 to serve federally operated schools in Southwest Alaska) and to measure the impact of the Center's services on its Eskimo elementary student users. The sample selected for most of the data-gathering consisted of 479 students and 36 teachers from 12 schools (identified as high or low use institutions), though in some instances students and teachers from all 32 of the area's schools were surveyed. In an effort to distinguish between the effects of library use and the effects of other variables upon the user, the following data sources were utilized: (1) the proposal for continued funding under Title III of the Elementary Secondary Education Act; (2) library use records from each of the sample schools; (3) Reading Preference Questionnaire (fourth and fifth graders); (4) Teacher Background Questionnaire; (5) Library Media Questionnaire; (6) informal interviews; (7) Library Media Use Questionnaires; (8) cloze tests (N=479); (9) Metropolitan Achievement Test (1971-72, 1974-75, and national comparisons). Statistical analysis revealed that the Center was unquestionably an exemplary resource and its impact upon the Eskimo student user was beneficial. (JC)

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ED127078

IMPACT: THE EFFECTS OF A RICH INFORMATION RESOURCE ON ALASKAN ESKIMO STUDENTS AND THEIR TEACHERS

An Evaluation of the Bethel Regional Library/Media Center

Prepared for the Bethel Agency
of the Bureau of Indian Affairs

by
Paul R. Streiff and Virginia Streiff

March, 1976

RC009357

U.S. DEPARTMENT OF HEALTH,
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ACKNOWLEDGEMENTS

We wish to express our appreciation to many people for their assistance in the efforts required for this study.

First of all, we extend our gratitude to all the teachers in the schools of the Bethel Agency who took time from their busy schedules to respond to our questionnaires. Above all, we wish to acknowledge their interest and their dedication in providing education programs for the children of Southwestern Alaska as well as many other services for the communities they serve.

We especially want to thank the teachers, aides, administrators, and students of the twelve schools we visited during the gathering of data for the study. The cordiality and the fine cooperation of staff members helped immensely in the work to be done, and the cooperation and enthusiasm of the students made the visits memorable as well as fruitful.

Our thanks also go to Mr. Peter Three Stars, Superintendent of the Bethel Agency, and his staff, for many kindnesses during our visits. In addition, assistance was immediately forthcoming when needed from Juneau Area Office personnel, and they, too, are accorded our gratitude.

We would also like to express our appreciation to staff members at the Alaska State Department of Education, and to the Anchorage Public Schools' Media Service administrators and librarians for helpful insights into library programs and into Alaskan education in general.

Finally, both our thanks and our admiration are extended to the Director of the Library/Media Center at Bethel, Mrs. Isabelle Mudd, and to Mr. William Mudd, Media Specialist at the center. Their excellent record-keeping has been essential to this evaluation effort, and their outstanding dedication to providing educational services for Alaskan children has made the evaluation effort both interesting and worthwhile.

Virginia Streiff
Paul Streiff

March, 1976

TABLE of CONTENTS

Page

ACKNOWLEDGEMENTS ii

LIST OF TABLES xi

ABSTRACT xiv

Chapter 1

I. INTRODUCTION 1

Purpose 1

Background of the study 1

Statement of the problem 5

Definition of terms 7

Limitations 8

Major questions 10

Organization of the report 14

II. PROCEDURES 15

Subjects 15

Data sources 17

Methods 28

III. FINDINGS: BETHEL REGIONAL LIBRARY/ MEDIA CENTER AS AN EXEMPLARY RESOURCE AND SERVICE 30

I. Introduction 30

II. Comparison with National Standards 30

Subjects, materials, and methods 31

Results 32

Standards for basic collections 32

Discussion 34

Summary 35

Standards for staffing 35

Discussion 38

Summary 38

Purchasing 38

Discussion 39

Summary 40

Production 40

Summary 40

Access and delivery system 41

Summary 42

Facilities 42

Summary 43

III. Teachers' Perceptions of the Quality of Materials and Services 44

Introductory discussion 44

Subjects, materials, and methods 45

Results 47

Delivery system 47

Content of orders 67

Use of materials 70

Learning outcomes 71

Perceived impact on the village 72

Recommended improvements 73

Discussion 75

Summary and conclusions 76

IV. FINDINGS: IMPACT OF LIBRARY/MEDIA RESOURCES ON LEARNING OUTCOMES 79

I. Introduction 79

II. Reading Comprehension 80

A. High Users' and Low Users' Reading Comprehension 80

Introductory discussion 80

Research hypotheses 81

Subjects, materials, and methods 81

Null hypotheses 83

Statistical treatment 83

Results 83

Discussion 85

B. Reading Comprehension Scores on Alaskan and Non-Alaskan Story Content 92

Introductory discussion 92

Research hypotheses 95

Subjects, materials, and methods 95

Null hypotheses 96

Statistical treatment 96

Results 96

Discussion 97

Summary and conclusions 102

III. Language Proficiency 104

A. Library Use, Language Dominance, and Types of Errors Characteristic of High and Low Users 104

Introductory discussion 104

Research hypotheses 106

Subjects, materials, and methods 106

Null hypotheses 107

Statistical treatment 107

Results 107

Discussion 108

B. Semantic and Syntactic Appropriateness of Errors Made by High Users and Low Users 108

Introductory discussion 108

Research hypotheses 111

Subjects, materials, and methods 111

Null hypotheses 113

Statistical treatment 113

Results 113

Discussion 120

C. Frequency Ranks of Error Words among High Users, Low Users, English-dominant, and Eskimo-dominant Students 130

Introductory discussion 130

Research hypotheses 132

Subjects, materials, and methods 132

Results 133

Discussion 134

Summary and conclusions 138

IV. Academic Achievement 142

A. Metropolitan Achievement Test Scores: 1971-72 and 1974-75 142

Introductory discussion 142

Research hypotheses 144

Subjects, materials, and methods 144

Null hypotheses 145

Statistical treatment 145

Results 145

Discussion 146

B. Metropolitan Achievement Test Scores and Cloze Test Results 149

Introductory discussion 149
Research hypotheses 151
Subjects, materials, and methods 152
Null hypotheses 152
Statistical treatment 152
Results 153
Discussion 153
Summary and conclusions 156
V. Reading Preferences and Attitudes of High and Low Library Users 158
Introductory discussion 158
Research hypotheses 159
Subjects, materials, and methods 159
Null hypotheses 160
Statistical treatment 160
Results 161
Discussion 173
Summary and conclusions 177
V. SOME RELATIONSHIPS BETWEEN LIBRARY USE AND CLASSROOM VARIABLES 179
Introductory discussion 179
Subjects, materials, and methods 180
Statistical treatment 182
Null hypotheses 184

Results 185

Discussion 195

Summary and conclusions 198

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 199

I. Summary and conclusions 199

The Library/Media Center as an exemplary resource 199

Compared to national standards 199

Teacher perceptions of quality 202

Conclusions 204

The impact of Library/Media Center resources on student learning outcomes 205

Reading 205

Language 208

Academic achievement 211

Predictors of Library Use and reading comprehension 211

Conclusions 213

II. Recommendations 214

BIBLIOGRAPHY 218

APPENDIXES

A. Cloze Test, Teacher Background Questionnaire, and Library/Media Use Questionnaire 223

B. 1971-1974 Library Circulation 234

LIST of TABLES

Table Page

I. Some Characteristics of Sample Schools 18

II. Enrollment in Sample Schools, Grades Two through Six 19

III. Readability of Cloze Test Stories 27

IV. Library/Media Use Questionnaire: All Respondents 48

V. Library/Media Use Questionnaire: High and Low Use Schools Only 49

VI. Ordering and Organization Procedures of Library/Media Center Materials in the Classroom 68

VII. Subjects by Grade Level and Library Use Category 82

VIII. Results of Analyses of Variance for Cloze Scores for Grades Two through Six 84

IX. Grade Level Mean Scores on Cloze Tests of Reading Comprehension: High Library Users and Low Library Users 86

X. Sample of High and Low Users: Blanks Left Empty and Accurate Responses 91

XI. Mean Alaskan and Non-Alaskan Story Cloze Scores of High and Low Users, Grades Three through Six 97

XII. Mean Cloze Scores, Story Types, and Average Readability Levels Compared 100

XIII. High and Low Users' Language Dominance and Cloze Error Type, Grades Two through Six 109

XIV. High and Low Users' Percent of Syntactically Appropriate Errors 115

XV. High and Low Users' Percent of Semantically Appropriate Errors 115

XVI. Percent of Syntactically Appropriate Errors of High Users and Low Users 116

XVII. Percent of Semantically Appropriate Errors of High Users and Low Users 118

XVIII. Percent of Syntactically and Semantically Appropriate Errors Among High Users 119

XIX. Percent of Syntactically and Semantically Appropriate Errors Among Low Users 119

XX. Average Actual Time for (A) Reading Instruction and Reading Aloud and (B) Independent Reading and Language-related Activity 122

XXI. Average Combined Reading Instruction and Reading Aloud Time for High and Low Users 126

XXII. Average Combined Independent Reading and Language-related Activity Time for High and Low Users 127

XXIII. Average Number of Blanks Left Empty by Third, Fourth, and Fifth Graders 129

XXIV. Word Frequency of Error Words Among English-dominant and Eskimo-dominant High Library Users and Low Library Users 135

XXV. Metropolitan Achievement Test Grade Equivalent Results for 1971-72 and 1974-75 147

XXVI. Correlations between Mean Scores on Cloze Tests and the Metropolitan Achievement Test 154

XXVII. Mean Number of Reading Preferences of Fourth, Fifth, and Sixth Grade High and Low Library Use Students 162

XXVIII. Most-preferred Story Topics of Fourth, Fifth, and Sixth Grade High and Low Library Users 164

XXIX. Rank Order of Reading Topics from Most-preferred to Least-preferred for Fourth, Fifth, and Sixth Graders 165

XXX. Least-preferred Story Topics of Fourth, Fifth, and Sixth Grade High and Low Library Users 168

XXXI. Most-recently-read Topics of Fourth, Fifth, and Sixth Grade High and Low Users 170

XXXII. Student Attitudes toward Independent Reading and Teachers Reading Aloud 171

XXXIII. Average Daily Minutes Allotted to Major Reading/Language Activities 187

XXXIV. Percentage of Daily Time Allotted to Major Reading/Language Activities 188

XXXV. Three Best Predictors of Library Use 191

XXXVI. Three Best Predictors of Cloze Reading Comprehension Scores 194

Abstract of the Study

This report presents the findings of an evaluation of the Bethel Regional Library/Media Center. The Center was established by the Bureau of Indian Affairs' Bethel Agency in 1971 to serve federally operated schools in Eskimo villages of Southwest Alaska.

A variety of approaches was employed in the measurement of two central evaluation objectives: the assessment of the Center as an exemplary resource and service, and the impact of a regional library/media resource on the learning outcomes of Eskimo students.

Multiple approaches and measures, especially in the measurement of learning outcomes, were essential in counterbalancing the basic difficulty of separating the effects of Library Use as a variable from the effects of other variables. To accomplish this a wide range of questions, a variety of analytical designs, and a variety of statistical procedures were employed. With regard to the first evaluation objective, the study revealed that the Center is unquestionably an exemplary resource and provides outstanding service to the teachers in the Bethel Agency Schools.

Measures related directly to the second evaluation objective, the Center's impact on learning outcomes, revealed convincing evidence of the benefits of the Center's resources to the principal intended beneficiaries, the Eskimo students.

The Bethel Agency may take justifiable pride in the establishment and maintenance of an outstanding educational service program which might well serve as a model for many other similarly remote and isolated regions.

CHAPTER I

INTRODUCTION

Purpose

The purpose of this study was to evaluate the Regional Library/Media Center operated by the Branch of Education of the Bureau of Indian Affairs' Bethel Agency. The Center is located in Bethel, Alaska, and serves 32 federally operated schools in villages throughout Southwest Alaska.

Background of the study

Southwestern Alaska is a vast expanse of delta formed by two rivers, the Yukon and the Kuskokwim. Encompassing some 100,000 square miles, it is a difficult land at best in which to live, with no forests, extremely long and cold winters, and permafrost added to poor soil to discourage any attempt at cultivation during a very brief summer.

Geographic and climatic factors notwithstanding, the area is the ancestral home of some 13,000 native Alaskan Eskimos who live in 36 villages strung out for the most part along the rivers and the coastline of the Bering Sea. As with other Native Americans, the Eskimo people of Southwestern Alaska are provided services by the United States Government under a trust relationship, and the area is identified administratively as the Bethel Agency of the Juneau Area of the Bureau of Indian Affairs. The services provided by the Federal Government through the Bureau of Indian Affairs include education, and for many years BIA teachers have been a familiar part of village life, performing many services not usually associated with the classroom. Teachers are the Federal Government's representatives at the local level, expediting a wide range of responsibilities such as the ordering of fuel and food, transportation of children to boarding schools, and providing emergency medical treatment, to name a few.

The BIA operates 32 schools in the Bethel Agency today, ranging from a one-teacher school with eight children enrolled to an 11-teacher school with an enrollment of 193. Seven of the 32 schools provide a kindergarten program in addition to the first through eighth grades found in each of the schools. (Some schools have no seventh or eighth graders.) Two of the schools provide some high school level instruction for a small number of students.

Many of the villages have a native Eskimo language, Yupik, as their everyday medium of communication. In these villages the children's experience with their second language, English, begins when they start school. In some other villages, English has been adopted as the home language, and has been in use for as long as a century. Thus, English is a second language for many Eskimo children of the population in this study, while it is the home language for others.

The geography of the Bethel region makes logistics the number one problem in providing any of the needed services to the Eskimo villagers. There are no roads or highways between villages. Surface transportation is possible during the winter in some cases, however, by using the river as an automobile road. A thoroughfare is cleared by snowplow, and passenger cars and trucks traverse the thick ice roadway with ease.

The advent of the snowmobile or "sno-go" has replaced the dog team for meeting many of the local transportation needs since like the team and sled it needs no cleared or paved highway.

By far the most widely used mode of transportation in the region, as in all of Alaska and the far North, is the airplane, which carries people and all manner of goods swiftly and easily between the supply and communications center, Bethel, and the many remote and isolated villages. Some locations have a reasonably dependable year-round landing strip. At other villages the river serves the pilots of the single engine aircraft as a runway, landing on skiis in the wintertime and on pontoons during the brief summer.

River transportation by boat is possible during the brief summer, of course, and a great deal of feverish activity is required to bring in prodigious tonnages of goods before freezeup. Restocking of supplies of all kinds for the villages, including everything needed for operation of the schools, is handled by barge from the ocean-going freighter North Star, operated by the BIA Juneau Area Office, which puts in to Bristol Bay after breakup in the spring. Small boats are used by the villagers for fishing and for carrying personal goods during this time of year also.

Careful advance planning is essential to life and survival in the villages. All goods needed for the operation of a village school must be ordered the previous year if they are to be received and on hand for the beginning of the new school year.

The Regional Library/Media Center. Under these conditions one would expect to encounter great difficulty in establishing any kind of educational program, and the literature provides plentiful evidence that the job has indeed not been an easy one. The Bureau of Indian Affairs has had to overcome these and other problems in providing schools and programs in the remotest of areas, and like most education agencies has carried on a continuing effort to improve the quality of its educational services to Eskimo children and parents. Part of that effort has involved an attempt to provide comprehensive library and media learning resources to the schools in the Bethel Agency in order to partially equalize the learning opportunities of Eskimo children with those of children living in more favored and accessible urban locations.

The idea for establishing a regional resource center was first proposed to the Commissioner of Indian Affairs in 1968. (Crawford, 1968) The concept was called the Air Bookmobile, referring to the delivery system which would be used in the distribution of books and other materials.

A basic assumption on which the concept was established was that throughout the United States the library is an essential and integral part of the educational system, a part which must be of highest quality if it is to carry its share of the educational responsibility. The challenge was to deliver high quality services under extremely difficult conditions in the most efficient and effective manner possible.

As with most innovative ideas the Regional Library concept was not given immediate universal support and was not funded for fiscal year 1969. It appears from the record that the proposal was not resubmitted for fiscal 1970 although other courses of action were undertaken which led to the de facto establishment of a regional library with a highly qualified director on board. The Director prepared a new proposal which was submitted by the Juneau Area Office for FY 1971 funding, a proposal which requested funding from both Title II and Title III of the Elementary and Secondary Education Act as well as planning funds from the Juneau Area for early childhood education. This proposal was funded, and additional funds were allocated from Title I of ESEA for the establishment of the Regional Library.

The 1971-72 school year was the first funding year of the Bethel Regional Library project, which continued to carry jointly the original title of Air Bookmobile.

The three year funding cycle provided under Title III, the innovative title of the Elementary and Secondary Education Act, came to an end in 1973. Since that time the Bethel Regional Library has been continued by the Bethel Agency as a part of the regular education program, but now in combination with the Instructional Materials Center which existed before the Library was established. That combination is reflected in the recently adopted name of Bethel Regional Library/Media Center.

Statement of the problem

The proposal to establish a regional library for the Bethel Agency specified several objectives, the most global of which called for establishment of "exemplary library service for a region of the State of Alaska which will serve as a model for future development of library service throughout the state." (Mudd, 1971)

The proposal contained provision for annual evaluation of the program and listed one librarian/evaluator and one reading specialist/evaluator in its staffing pattern. These evaluators were to make at least two trips to Bethel and visit at least two schools on each trip, one in November and one in May. Each evaluator was to submit a written evaluation report after each visit. This function has not been performed in a formal sense during the period the Center has been in operation. The funds requested for the evaluators as well as for a "disseminator" were deleted from the proposal prior to approval. The "disseminator" function was to be that of journalist responsible for writing and distributing press releases periodically, a function specifically included in Title III guidelines, and for designing and producing a final brochure on the project.

The evaluation and dissemination functions are both considered by project administrators as essential to the overall, global first objective, that is:

a. to the identification of the library as "exemplary", and to the assessment of the quality of its services as "equal to services to be found in an urban area," and

b. to the determination of quality and effectiveness sufficient to serve as a "model for future development of statewide library services."

It may be added that some believe the Bethel Regional Library/Media Center might serve as a model for many other areas where a sparse, widely scattered rural population's educational needs must be met.

The problem, then, was to design and conduct an evaluation study of the Bethel Regional Library/Media Center to ascertain the extent to which it is accomplishing its specified objective of establishing an exemplary library/media service for rural Southwest Alaska, and to measure the impact of that service on those using and receiving that service. Thus the two major objectives for the evaluation study are:

1. to assess the quality of the Bethel Regional Library/Media Center as an exemplary operation, and
2. to measure the impact of the Center's services on the learners receiving those services.

Definition of terms

Evaluation: the process of determining the kinds of decisions that have to be made; selecting, collecting, and analyzing information needed in making these decisions; then reporting this information to appropriate decision makers. (Klein et al, 1970)

High Users: those schools in the Bethel Agency BIA which were determined by the records to have ordered and received the largest numbers of library/media materials during school year 1974-75. This term is also assigned to students and teachers within the schools.

Low Users: those schools in the Bethel Agency BIA which were determined by the records to have ordered and received the smallest numbers of library/media materials during school year 1974-75. This term is also used to designate students and teachers within the schools.

Library Use: refers to a quantitative measure of the average number of library/media items per pupil ordered by a school during a school year.

Limitations

Any effort to judge the Bethel Regional Library/Media Center as an exemplary program must face the age-old question, "Compared to what?" National standards for media centers were designated as the criteria with which the Center would be compared, yet in many ways this Center is like no other. In a very real sense, then, any comparison of this Center with any other will not easily reflect those aspects which make it unique in very unusual circumstances, but will be limited to the basic criteria recommended as national standards.

Isolating the effects of the Library/Media Center upon student learning outcomes is an impossible task, for all practical purposes. Many variables assuredly must be taken into account along with the effects of the resources which the Bethel Center make available.

There are, for example, curricular differences among the 32 village schools. At one level, there are differences related to how each teacher plans and implements plans each day in the classroom. At a major level, there are such differences as the presence of bilingual programs, special education programs, and kindergartens, in some schools, and in other schools no programs other than the one carried on daily by the classroom teacher.

In addition there are language differences. Native Eskimo language speakers predominate in some schools and villages, except for the teachers, while other villages claim to have been predominantly English-speaking for a hundred years or more.

Beyond language background and school curricula, there are environmental differences. Some villages, located near or on large inland rivers or in the Kuskokwim delta area, have generally more frequent contact with people, goods, and services of non-Eskimo society. In such locations, severe weather is counterbalanced by the advantage of proximity to the more major community of Bethel on the Kuskokwim River. Aircraft can take advantage of breaks in the local weather more readily. Other villages are much more remote, isolated more frequently and for longer periods, owing to both weather and distance from other communities.

The educational circumstances surrounding learning outcomes of the Bethel Regional Library/Media Center, such variables as location, major curriculum differences, and language differences have been controlled for as carefully as has been feasible.

Variables which are more elusive are those of the teacher in the classroom: what texts are used, how lessons are planned and conducted, how student work is guided and evaluated, and how resources of the Library/Media Center are put into use once they are ordered and received. Questionnaires have been employed to establish some certainty about such events and attitudes as the perceived value of library/media materials in specific subject matter areas and the teachers' actual utilization and management patterns.

But a major point to keep in mind throughout this report is that the level of Library Use itself is probably the result of a combination of factors: teachers who believe that their students can read, teachers who think their children aren't able to take advantage of the wealth of English language materials the Center can provide, and teachers who believe they have enough instructional material to work through without bringing in additional materials, among others. Certain specific factors, such as the amount of time given to teacher-guided reading instruction, have been ferreted out from questionnaires, and employed in some analyses.

To summarize to this point, while there are a vast number of variables that are doubtless going unanalyzed, every effort has been made either to control for, or to specifically analyze, a wide range of variables that may be important in the matter of student learning outcomes.

Major questions

This study has been guided by a number of questions pertinent to major aspects of Library/Media Center evaluation. These questions focus on the two major areas of importance to this evaluation: the quality of Library/Media Center services, and the learning outcomes exhibited by students receiving these services. The major questions are discussed here, while specific research hypotheses are presented in the various appropriate subsections of this report along with analyses and results.

Quality of services. School staff members were asked to respond to questions about the adequacy, efficiency, and value of Library/Media Center resources. To what extent is excellence perceived? To what extent is improvement thought important? What relationship is evident between perceived value of the Center and implementation of available resources in classroom program planning and/or professional growth? These questions will be the guides for evaluating responses to the Teacher Background Information Questionnaire and the Library/Media Center Use Questionnaire.

Learning outcomes. A number of questions direct the analysis of the results of cloze tests of reading comprehension and the other student performance measures administered during the course of the study.

First, among the 32 schools, there is a wide range in the average number of library orders per student placed annually, from 1.0 for one school to 16.1 for another. These figures are based on the recent two-year period (1973-1975). It would seem that differences might be discerned between cloze reading comprehension scores of Low Library Use and High Library Use students, assuming the library materials are used once they are ordered and received.

Next, considering the "knowledge of the world" thought by the regional librarian to be important for Eskimo children, it is possible that students in Low Library Use schools would fare less well than students in High Library Use schools on comprehension tests of reading materials with content not particularly related to the Alaskan environment. Several questions arise here. Will students who receive more library orders perform equally well on both types of content, or will Alaskan-oriented content elicit better performance than non-Alaskan content? Further, what, if any, relationship will be demonstrated between the range of story topic preferences (elicited by a Reading Preference Questionnaire) and reading comprehension performance of the students? What kinds of reading preferences will be exhibited by the students?

Next, considering the variety both in language of instruction and in home language background, the use of cloze instruments should reveal something of language proficiency differences among these children. Cloze testing has been investigated with students of English as a second language as well as with native English speakers. One difference that distinguishes second language learners from native speakers of a language is that native speakers fill in function words (e.g. articles, conjunctions, prepositions) with relatively more accuracy than they fill in content words (e.g..nouns, verbs, adjectives, adverbs). (Klare et al, 1973) For second language learners the reverse is true. Will this hold true for these Eskimo children? Teachers have been asked to judge the language dominance of the children in their classrooms. Among children who are perceived as predominantly Eskimo-speaking in background, will those who attend High Library Use schools demonstrate a greater trend toward native-English-speaker errors than those who attend Low Library Use schools?

In another type of error analysis, syntactic and semantic appropriateness of words selected for fill-ins will be studied. It is expected that children with more exposure to Library/Media Center resources will demonstrate a greater proportion of syntactically and semantically appropriate errors than will children with less exposure to such resources.

Another type of analysis may reveal differences among errors made by High versus Low Users of library materials. A careful study of erroneous word substitutions will be made, in a further attempt to elucidate differences between students in the two general types of schools. In this analysis, word frequency will be studied. Will there be a tendency for children who have been exposed to more library materials to select fill-in words of lower overall frequency than children who have been exposed to relatively few library materials? Greater sophistication in vocabulary may be demonstrated by children who have read, viewed, or listened to more materials from the Library/ Media Center, than by children who use relatively fewer of these materials.

Metropolitan Achievement Test data will be used in two ways. First, longitudinal information from such tests as administered prior to establishment of the Library/Media Center, during the first year of the Center's operation, and during the recent school year will be employed. Will improvements be evidenced in student scores throughout this period? Reading, language, and total scores will be evaluated. Secondly, using the recent year's scores, what kind of correlation is there between students' cloze reading comprehension scores and Metropolitan Achievement Test scores?

Finally, the relationships between Library Use and certain classroom variables are explored. What classroom factors are good predictors of Library Use? What features of teacher attitude and classroom operation are most directly related to both reading comprehension and Library Use?

Organization of the report

The remainder of this report presents, in order, procedures in general (Chapter II), analysis of perceptions of excellence of Library/Media Center services (Chapter III), the impact of Library/Media Center Use on learning outcomes of students (Chapter IV), the relationships between some classroom variables and Library Use (Chapter V), and conclusions and recommendations (Chapter VI).

CHAPTER II

PROCEDURES

The subjects, data sources, and general methods of this study are the topics of this chapter.

Subjects

Approximately 2600 Eskimo children of 32 remote bush and coastal Southwest Alaskan villages along with 124 teachers serving those villages comprise the population of this study.

The sample selected for most of the data-gathering of this study consists of 479 students and 36 teachers in 12 schools. In several parts of the study students and teachers of all 32 schools were included, as in the comparison of Metropolitan Achievement Test data and in the attitude assessment using the Library/Media Use Questionnaire.

The sample consists of the children in grades two through six in the 12 schools, along with their teachers. First graders were excluded as inexperienced readers. First grade students typically have less than adequate experience with encoding tasks such as are involved in completing cloze tests.

Since weather and airstrip conditions are a major factor in accessibility of the schools, strict random sampling was not feasible. Thus, it was decided to base sample selection on several other features, primarily Library Use.

The school selection method was described in detail in the preliminary report. (Learning Research Associates, 1975) Briefly, the main effort in selecting schools for testing was to equalize as much as possible all other variables such that Library Use figures were the main differentiating feature. This approach was used to facilitate drawing out the differences between students in schools with high Library/Media Center use records and students in schools with low use records.

The average number of orders per student per school was calculated for school years 1973-74 and 1974-75. Two rank-order lists were prepared showing the rank of each school from highest use to lowest for each of the two school years in terms of total numbers of library/media materials ordered.

Stability of use over the two years as well as amount of use for a given year was considered important to possible long-range learning outcomes, thus the next step was to eliminate from consideration those schools which showed considerable fluctuation in number of library/media orders from one year to the next. Schools which varied by five or more rank order positions between the two school years were eliminated, yielding a list of 18 schools which could be called stable-users over the two-year period.

To determine two groups, High Users and Low Users, several more criteria were employed. An important task, as stated earlier, was to equalize the sample as much as possible on the basis of other major influences within the programs of the various schools. Special education teachers and bilingual programs are two examples of such major variables. The presence of kindergartens is another. Characteristics of the 14 schools finally selected are presented in Table I.

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insert TABLE I here

Although two groups of seven schools each comprised the final selection, the final number was two groups of six schools each. Weather and airstrip conditions prevented visits to the other two schools.

All children in grades two through six who were present on the day of the research team's visit to a school for testing were included in some analyses, while a random sample from the main sample was used in other cases. Table II presents enrollment information for each of the five grade levels in the schools which were visited. Table II also shows the average number of library orders per pupil annually for 1973 to 1975.

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insert TABLE II here

Data sources

A number of data sources were used in the study. Several of these were used in more than one analysis.

Proposal. The basic information on the establishment of the Bethel Regional Library/Media Center, was derived from the proposal prepared by the Director for continuation of funding under Title III ESEA. This proposal was submitted in April, 1971. The proposal

TABLE I

Some Characteristics of Sample Schools

High Users

n= 7 schools

mean teacher-student ratio:	1:20
mean number aides per school:	2.6
mean number library orders per student:	8.4
total number special ed. teachers:	1
total number kindergartens:	0
total number bilingual programs:	1
total number students:	462

Low Users

n= 7 schools

mean teacher-student ratio:	1:26
mean number aides per school:	1.6
mean number library orders per student:	2
total number special ed. teachers:	0
total number kindergartens:	0
total number bilingual programs:	1
total number students:	534

TABLE II

Enrollment in Sample Schools, Grades Two through Six

Grade:	2	3	4	5	6	Totals	Average Annual Library Orders per pupil
High Library Users:							
School 1	3	6	8	8	5	30	16.1
School 2	3	3	4	3	10	23	13.5
School 3	10	11	7	11	3	42	6.9
School 4	18	8	4	6	7	43	4.7
School 5	24	15	16	11	13	79	4.6
School 6	7	12	12	13	7	51	4.4
	65	55	51	52	45	268	
Low Library Users:							
School 7	10	5	10	11	22	58	3.9
School 8	12	11	5	8	6	42	3.3
School 9	8	19	25	6	12	70	2.2
School 10	9	9	13	4	9	44	1.4
School 11	11	8	8	4	5	40	1.2
School 12	4	8	6	7	6	31	1.0
	54	60	67	40	60	285	
Total:	119	115	118	92	105	553	

provided such information as goals and objectives, program content, and procedures.

Library use records. The Director of the Bethel Regional Library/ Media Center has kept detailed records of monthly library/media orders received from each school in the Agency. The records for school years 1973-74 and 1974-75 were used in the study to calculate library/media use by all schools for purposes of comparison. Orders placed at each grade level were not tracked, so school figures formed the data base used in this study.

The average number of orders for materials per student over this two year period was calculated, using school population statistics. This yielded a Library Use score for each school. The variable referred to as Library Use throughout the remainder of this report is the library use score thus derived.

Library Use scores constituted the basis for initial selection of the two major test groups: High Users and Low Users.

A caution is in order here. Amount of use as indicated by the High Use and Low Use designations is not assumed to reflect quality of use, teachers' abilities and dedication, or student intelligence. Prior to this report the Director of the Center made no such distinctions herself, preferring to provide all requested materials and services and to encourage requests from all schools.

Metropolitan Achievement Test records (MAT). The MAT is administered annually in all classrooms as a regular part of the testing program in the Bethel Agency. It is recognized that any hypothesized improvement in MAT scores from year to year could not be totally credited to availability of resources and services from the Library/ Media Center. However, it would seem that if performance differences should be revealed that correlate with Library Use data some part of the impact could be attributed to the Center.

The original study design included analyses on long-range data, including the 1968, 1972, and 1975 MAT scores for all 32 schools. It was felt that the 1968 data would provide performance information for a year preceding the availability of the resources of the Center. The 1971-72 scores would indicate achievement performance following the first year of the Center's operation, and the 1974-75 MAT data would indicate performance during the fourth year of operation.

MAT records from the three years were sought in the Juneau Area Office where such documents are kept after they are collected from the various agency offices. It was found that 1968 MAT scores were recorded in the form of grade level median rather than mean scores, and the data were less complete than anticipated. Thus, only scores from the 1971-72 and 1974-75 testing are included in this study.

MAT information was available for 1971-72 only in the form of grade level means for each subtest and for the total battery for each of the 32 schools in the Bethel Agency. The 1974-75 information was supplied in the same form by the Bethel Agency. A feature of the 1974-75 MAT data is that it differs in scoring procedures from the 1971-72 data. The 1971-72 MAT tests were sent away for machine scoring, whereas the classroom teachers administered and scored the tests for their own classrooms in the 1974-75 testing period. Agency policy determined the details of test administration and scoring in both cases.

The difference in scoring procedures may make a difference in the amount of error present in the MAT data. There is also a difference in test administration related to one analysis which uses the MAT scores and cloze test scores. The teachers both administered and scored the MAT for their own classrooms, while the research team administered and scored the cloze tests for all students participating in the study. Thus, there is a difference here in both who and how many were involved in test administration and scoring.

Reading Preference Questionnaire. Each fourth through sixth grade student in the study completed a Reading Preference Questionnaire. This was in checklist form, and was administered orally, with the administrator reading aloud each item on the form to the group of students who checked their reading preferences. The questionnaire provided information on the students' perceptions of the frequency with which teachers read aloud to them, the most recent books the students had read, and the kinds of stories they liked best.

Teacher Background Questionnaire. The Teacher Background Questionnaire was designed to provide information about teacher educational background, length of service as a teacher, perception of students' language dominance, daily classroom schedules, and curriculum content in each teacher's classroom. It consisted of both rating scale items and fill-in items. This questionnaire was intended to provide a partial check, as well, on the Library/Media Questionnaire information. The

Teacher Background Questionnaire was mailed out with return envelopes prior to the research team's testing sessions at the schools.

Since the Library/Media Questionnaire was distributed to school staff members during the visits of the research team, it was intended that the earlier mailing procedure with the Teacher Background Questionnaire would allow for relative independence of the two instruments. Staff members in all 32 schools received this questionnaire, with 75 percent returning them.

Informal interviews. At each of the 12 schools the research team visited, a point was made of talking to staff members about several topics. One such topic was the kind of local (in the school) library and media collections available. Another topic was the kind of language instruction provided for students who were non-English speakers at the time they entered school. This information, too, was forthcoming through the daily schedules and curriculum content provided by teachers on the Teacher Background Questionnaire. Such informal interviews served to clarify what was meant, for example, by "language period" on the background questionnaire. Interviews also served to tap spontaneous reactions to the value of an "in-house" library/media collection compared to the resources available through the Regional Library/Media Center.

Library/Media Use Questionnaire. A Library/Media Use Questionnaire was designed primarily as a rating instrument for measuring attitudes and opinions of teacher-users of the Bethel Regional Library/Media Center materials and services. Most of the 50 items on the questionnaire employed a four-point rating scale on which respondents could indicate agreement or disagreement with statements reflecting the quality of the Center's operation. A Likert type program was used to analyze responses.

The instrument, which has a reliability coefficient of 0.87, sought users' opinions in six categories, including efficiency and effectiveness of the Center's delivery system, quality and appropriateness of materials, use of materials, perceived outcomes, perceived impact on the village, and recommendations for improvement.

Cloze tests. The measurement of learning outcomes was undertaken primarily through the use of the cloze procedure for testing reading comprehension. This procedure was selected because of its validity, reliability, and efficiency in preparation and scoring. (Klare, 1972)

In brief, the cloze procedure involves deleting every nth word from a written passage. The task of the reader, then, is to fill in the blanks left in place of the deleted words.

In their use as a measure of reading comprehension, cloze tests have been found to correlate with conventional reading comprehension tests in the range of .73 to .84. (Bormuth, 1968)

For the present study the cloze procedure enabled the researchers to test students' reading comprehension on a variety of materials from the Bethel Regional Library/Media Center. Making use of such materials seemed much more appropriate for a study of the impact of the Center than relying solely on conventional standardized tests.

The content of the cloze tests in this study was comprised of relatively short (approximately 150 to 175 words) passages selected from uncirculated books at the Bethel Center. Uncirculated books were chosen so that the reading test material would be equally unfamiliar to all students.

Stories were skimmed for content, and portions copied for application of readability measures and more critical review. In general the stories were about animals, family life, and children.

One objective of the study was to ascertain whether any differences in students' comprehension might be revealed between Alaskan-oriented material and non-Alaskan-oriented material. For each grade level to be tested non-Alaskan and Alaskan stories were equated as much as possible for both readability level and story theme.

Stories were first selected on the basis of the Fry readability levels given in the Elementary School Library Collection Catalog for first through sixth grade reading levels. In addition the Dale-Chall Readability Formula was applied. (Dale and Chall, 1948)

Table III presents the ten story titles from which passages were selected, the Dale-Chall readability raw score, the Alaskan or non-Alaskan orientation of the books, and the grade levels at which passages from the books were used. It should be noted that the Dale-Chall formula is appropriate for assessing readability from the fourth grade up. For fourth grade through sixth grades the readability levels were from lower fourth through upper fifth grade. Thus, the raw scores given for second and third grade materials are not accurate in terms of grade level, but they are useful as a basis for equating readability levels of the materials. For second and third grades the Fry formula indicated the materials selected were at the upper first through upper second grade readability levels.

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insert TABLE III here

In an effort to maintain student interest and attention in what was predicted to be a relatively difficult task, the researchers decided to administer several short passages rather than one long one at the different grade levels.

Second graders were administered two passages, one with an Alaskan and one with a non-Alaskan theme. Each passage was about 175 words long, with every seventh word deleted yielding 25 blanks in each passage or 50 blanks totally.

Third graders were tested on four passages in which every seventh word was deleted yielding a total of 100 blanks, 25 per passage.

Fourth through sixth graders' passages were constructed with an every-fifth-word deletion scheme. Four passages comprised the materials at each of these grade levels for a total of 100 blanks, 25 per passage. Blanks to be filled in were lines uniformly 15 spaces long.

Several complete sentences introduced each passage, and each passage ended with a complete sentence.

To increase reliability, each passage was prepared in as many different versions as the deletion scheme would allow. Five different versions of each passage incorporating a fifth-word deletion pattern, and seven versions of each version using a seventh word deletion scheme were prepared. This yielded a total of 58 versions for the 10 passages.

A total of 479 cloze tests was administered. Tests were administered

TABLE III

Readability of Cloze Test Stories

Story Title	Dale-Chall Raw Score	Theme	Grade Levels Tested
*On Mother's Lap	4.16	Alaskan	2 , 3
*The Winter Cat	4.19	Non-Alaskan	" "
*Eskimo of Little Diomede	4.28	Alaskan	3 , 4
*Andy and the Wild Worm	4.31	Non-Alaskan	" "
The Day Tuk Became a Hunter	4.40	Alaskan	4
Small Boy Chuku	4.94	Non-Alaskan	"
Honschi	4.74	Non-Alaskan	5 , 6
Biography of a Polar Bear	5.18	Alaskan	" "
Socks	5.43	Non-Alaskan	" "
The Great Fish	5.75	Alaskan	" "

*The Fry readability formula places these stories at the first through upper second grade level. The Dale-Chall raw scores were used only for purposes of matching Alaskan and non-Alaskan passages as closely as possible.

by the research team during the period of April 30 through May 8, 1975. Standard instructions for cloze tests were given to each group tested and the different versions of the passages were distributed randomly in each classroom.

Methods

School visitation. Of 14 schools originally selected for cloze test administration, 12 were final participants in this aspect of the study. Two were deleted from the schedule owing to inclement airplane landing strip conditions. The 12 schools, then, were visited between April 30 and May 8, 1975. The schedule consisted of visiting two schools each day, with travel from one location to another taking place by airplane during the lunch hour.

High and Low Use schools were counterbalanced for morning and afternoon visitation, to equalize time-of-day effects as much as possible.

The order of events at each schools was (i) review with school staff of classroom arrangements for test and questionnaire administration, (ii) a warm-up spelling task for students prior to administering the cloze tests, (iii) administration of cloze tests, (iv) administration of the Reading Preference Questionnaire in the fourth through sixth grades, and (v) brief interviews with teachers regarding the students, the curriculum, teaching materials, and local library collections.

In addition, as a final part of each visit, the research team checked with school staff members on the completion and return of the Teacher Background Questionnaire which had been sent out in advance of the visit. Copies of the Library/Media Questionnaire were left with staff members, along with a stamped, addressed envelope for direct return of the questionnaire to the researchers.

Details of methods pertinent to each test and questionnaire are described in each subsection of this report along with analysis and discussion of the data gathered.

Data scoring and analysis. Three independent judges scored the cloze tests and tabulated questionnaire information. Master sheets were prepared for the results of each instrument employed, and also for the variety of different analyses which were conducted with the resulting information.

Cloze test scoring employed the exact word procedure, in which only the exact word which has been deleted (or a minor misspelling of it) is accepted as correct. This procedure has been recommended (cf, Bormuth, 1968) as the method yielding the most reliable results.

Computer programs from the Statistical Package for the Social Sciences and the Biomedical Computer Programs were used for the statistical analyses of data. A number of different hypotheses were tested using cloze tests and other data. Descriptions of methods specific to each such analysis are presented in the appropriate subsections of this report, along with hypotheses, results, and discussion.

Appendix A contains an example of the cloze test, and copies of the Teacher Background Questionnaire and the Library/Media Use Questionnaire.

CHAPTER III

FINDINGS: THE BETHEL REGIONAL LIBRARY/MEDIA CENTER AS AN EXEMPLARY RESOURCE AND SERVICE

I. Introduction

One major objective for this study was to ascertain the extent to which the Bethel Regional Library/Media Center constitutes an exemplary resource and service. Two aspects of the objective were investigated, and are reviewed in this chapter.

The first aspect of the objective addressed in this chapter is: How does the Center compare in quality with national standards for Library/Media Centers generally? The proposal for establishing the Center called for establishing "complete library services as outlined in the _Standards for School Media Programs_." (American Library Association, 1969)

The second aspect of the evaluation of this objective sought to ascertain users' perceptions of the quality of materials and services, including the delivery system and perceived benefits in the instructional program. This concern is presented in Part III of this chapter, where users' responses to questionnaires are discussed.

II. Comparison with National Standards

In this subsection, several areas of Library/Media Center operation will be reviewed. The areas of quantity of material in the basic collection, staffing adequacy, access and delivery of library/media materials, purchasing and production, and facilities as evidenced in the Bethel Regional Library/Media Center will be compared with national standards for these categories.

Subjects, materials, and methods

Data on the Bethel Regional Library/Media Center were collected on site by the investigators. The physical facilities housing the Center, staffing, and circulation operations were observed, among other things. The director's files provided specific information on the Center's collection, acquisition and updating, and circulation figures and requests from the 32 schools in the Bethel Agency.

In accordance with the criteria specified, national standards for media centers were consulted for comparative purposes. Standards for School Media Programs (1969) is a joint publication of the American Library Association and the National Education Association. This title is the successor to Standards for School Library Programs (1960), and is in turn succeeded by a 1975 publication entitled Media Programs: District and School. For purposes of this study reference is made to standards projected in both the 1969 and 1975 publications.

Information categories used in this analysis are:

i) Standards for basic collections
ii) Standards for staffing
iii) Access and delivery system
iv) Purchasing and production
v) Facilities

Results

Standards for basic collections. The standards established in the 1969 publication for basic collections of a media center serving schools of 250 students or more call for 6000 to 10,000 book titles plus approximately 8000 additional items ranging from filmstrips to professional materials for teachers.

Collections include materials and equipment. Materials in print, visual, auditory, and tactile formats, with associated equipment, constitute the collection, including textbooks and related instructional materials and systems.

The 1975 publication calls for 20,000 items in the total base collection of a school enrolling 500 students, including 8,000 to 12,000 books. Under the heading "Extended Provisions" we find the following statement:

> There is no limit to potential user need and therefore no justifiable quantitative limit to the size of a collection. Beyond the recommended base, the budget permits expansion of the collection when needs arise. The media staff obtains for users additional items available from local, regional, state, and federal agencies.

The 1975 publication reflects some increase over 1969 in total items recommended. In addition, the recommendations now presented are for schools with 500 or fewer users whereas the 1969 standards were for schools enrolling 250 or more.

Standards are established for individual schools or districts, and the rapid growth of the regional media program concept in the past decade is acknowledged. Specific services which may be provided by regional programs are noted, including technical processing, providing advisory, consultative and informational services, and production of educational radio and television programs.

The Bethel Regional Library/Media Center serves a total student population of approximately 2600 attending 32 separate village schools. The teaching staff numbers 124. The schools range in size from a low of one teacher for a school enrolling eight children to a high of eleven teachers in a school enrolling 193. Of the 32 schools 15 are two-teacher schools while the remaining 15 range from three to eight teachers.

By the end of the 1973-74 school year the inventory of all materials in the Center's collection totalled almost 30,000 items. By 1976, the figure rose to 40,000. This number does not include hardware (e.g., overhead projectors, 16mm. projectors, tape recorders, closed circuit television) which is present in abundance in each of the 32 schools, nor does it include textbooks and other instructional materials and systems which are found in each school.

In-school book collections add an additional 26,000 items to the total library/media collection in the Bethel Agency for a total of 66,000 items.*

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*The Director of the Regional Library/Media Center reported a total of 73,340 print and non-print items in mid-1975-76, in the Center and in the schools. By the 1975 standards (40 items per pupil), the Director reported that the total collection equals 73 percent of the number of items currently recommended.

The 1974 total included more than 18,000 books, almost 4000 filmstrips (including sound filmstrips), 1000 Super 8mm. filmloops, 5000 recordings, and 2000 video tape programs. It is important to mention here that every school served by the Regional Library/Media Center has at least one television receiver with a video cassette player provided by the Center for playing video-taped programs.

Data on circulation of library/media materials for school years from 1971 to 1974 may be found in Appendix B of this report.

Discussion. The Bethel Regional Library/Media Center is unique among library/media centers in the United States. On the one hand, it is regional in geographic terms, serving 32 schools throughout the Bethel (Southwest Alaska) region.

It is also regional in function (as described in the standards publications) making available a number of the special services specified for "regional" programs. Of particular importance is the establishment of a close working relationship with the State library in Juneau.

On the other hand the Bethel Center serves as the school Library/Media Center for all or most of the 32 schools in the region. That is, few if any of the schools have in-house collections that are adequately organized or housed for optimal educational benefit. No school among the 32 has anything like a complete collection or the staff to manage one, nor could it have. Space and personnel are simply not available in the village schools even if a complete collection could be provided. Thus, while the Center may be described as regional in geographic terms it actually functions as a complex of many individual school libraries.

Summary. Whether one views the Bethel Library/Media Center as a regional or as a school library it clearly surpasses the 1969 standards for basic collections recommended for school media programs by the American Library Association in terms of the size and variety of its collection. It is within about 25 percent of reaching the current standards.

Standards for staffing. According to the standards recommended by the American Library Association (Media Programs: District and School, 1975) a school enrollment of 2000 requires between 15 and 24 media staff members to provide comprehensive media services. This number should include a director or head of the media program, four to seven additional media professionals, five to eight media technicians, and five to eight media aides.

Media Programs lists a number of guiding principles for staffing if the purposes of a library/media program are to be realized. Several of those principles are important to mention here.

i) Media staff are in the vanguard of educational programs and practices, participating in and encouraging innovative teaching and learning practices.

ii) Media professionals, as members of the instructional staff, make instructional decisions with in their purview and provide appropriate leadership in the educational process.

iii) Staff in sufficient number is an indispensable part of a functional media program.

Comment on guiding principle i): This guiding principle describes well the competencies of the two professionals of the Bethel Regional Library/Media Center. Both are well-qualified, by university training and by experience relevant to the field, to "participate in and encourage innovative teaching and learning practices." The Director holds a master's degree in Library Science, is a respected member of professional library associations (as well as having held office in them), and is experienced in library administration as well.

Comment on guiding principle ii): At this point the resources and services of the Center do not appear to figure prominently and specifically in curriculum planning in most schools in the manner recommended. According to the Library/Media Use Questionnaire, the majority of teachers indicate that materials received from the Library/Media Center are generally considered valuable for student independent time. Responses to other questions indicate that teachers are far from unanimous in their view of the value of library/media materials in the curriculum areas of music, math, art, and library skills. While there is general agreement that student reading skills benefit from library materials, the use of reading materials, again, appears to be mainly during student independent time.

The essential educational tools available from the Library/Media Center appear to enter the teacher's planning after the fact, rather than as an integral part of curriculum planning. There are a few notable exceptions, such as the instrumental music program at one school which the researchers visited. Such programs are, however, not the general case.

A fairly high rate of teacher turnover, limited Center staffing, and logistical constraints restrict the Center personnel's active participation with school staff members in planning for curricular use of Library/Media Center materials. It appears that more direct professional library/media assistance in curriculum integration of materials would be beneficial to the students.

Comment on guiding principle iii): While the quality of professionalism is high in the Library/Media Center, it is impossible for only two professionals to provide this direct service to 32 schools in addition to the work load involved in overall management of the Center's resources. The need for direct personal interaction could only be met by additional professional and para-professional library/media staff. Limited staffing clearly will affect the range of services the Center can provide. For example, in addition to curriculum and training services, beyond acquisition and circulation of materials, staffing should be adequate for producing materials to meet special local needs.

The Bethel Center is operated by a total staff of five, including two professionals, one technician, and two clerk/aides. This staff of five provides library/media services to 32 widely separated and isolated schools with a total enrollment of 2600. Serving such a population is a vastly more complex task than serving one school with an enrollment of 2600.

Discussion. While the collection available to the 32 schools in the Bethel region from the Library/Media Center is outstanding there is a great discrepancy between the recommended staffing standards needed to manage an operation of this size and the staff which has been doing the job.

Teachers and aides in the 32 schools served obviously perform a media function in requesting, receiving, utilizing, and returning materials from and to the Center. These functions must be performed by their counterparts in any school, however, and the people performing them could not be considered as media staff. Clearly, the services provided by the Center greatly exceed what could normally be expected from a media program with this level of staffing.

Summary. Staffing of the Bethel Regional Library/Media Center is at best one-third what national standards recommend. Considering the unusual conditions under which services are being provided staffing should probably be five times the existing level. The outstanding collection available would undoubtedly result in significantly greater learner benefits if staffing were more nearly adequate.

Purchasing. The national standards for media programs tell us that two important elements for successful media center operations are creative organization and special adaptations to unique circumstances. The Bethel educational circumstances are clearly unique, and the Director has had to exhibit creative organization from the beginning, starting with bringing together a large collection in a very short time with an extremely limited staff.

At the outset the Director realized that, even with sufficient trained staff (which was not available) the tasks of selecting, ordering, receiving, accessioning, and storing of thousands of items would be monumental.

Another overwhelming task, especially in view of severe time limitations, was the preparation of a catalog, essential for circulation of materials, which could be distributed to every classroom in all 32 schools. It was recognized that the catalog would have to be updated periodically, requiring much additional work.

The combination of these tasks could easily have taken a year to accomplish with the very limited staff provided for by the project as it was approved.

Discussion. These problems were resolved effectively and efficiently by a decision to purchase the entire collection of media as listed in the Bro-Dart Elementary School Library Collection Catalog. This decision did not, of course, relieve the staff of the work of receiving, accessioning, and storing, but by minimizing the job of selecting and ordering from hundreds of sources an impossible task was made possible.

A copy of the Elementary School Library Collection Catalog was purchased for every classroom in the 32 schools in the Agency and delivered to them for immediate everyday use. The plan also includes regular updating of the collection by purchase of new editions of the catalog as they become available. This system has been in use from the Center's inception and seems to meet its needs very well. Teachers can also order special items for their own schools with the assistance of the Library/Media Center.

Textbooks and other classroom instructional materials and systems continue to be purchased through regular budgeting channels of the Bureau of Indian Affairs.

Summary. The Bethel Library/Media Center adopted a very effective and efficient plan for purchase of their initial collection and for regular updating. That system continues to serve the needs of the Center and the schools extremely well. Creative organization and special adaptations have made it possible for thousands of Alaskan children to receive the benefits of a broad variety of resources.

Production. Standards for Media Programs calls for production capabilities in a wide range of media, including graphics, printing, photography, television and radio, audio tape production, and the preparation of kits, models, and displays.

The Bethel Library/Media Center includes production capabilities in most of these areas, with especially sophisticated equipment for the production of video-taped programs.

Summary. Production of materials by the Bethel Center is limited only by staff size.

Access and delivery systems. The standards state that:

> Access and delivery systems are the means by which students and teachers obtain materials, equipment, and other resources at the time of need or desire. Each system must have structure and definition, but creative organization and skill in making special adaptations are also basic to every operation.

The Bethel Regional Library/Media Center is unique in the United States and possibly in the entire world in terms of access to and delivery of learning resources under the most difficult of circumstances.

The system established by the Center provides for efficient acquisition and organization of materials for accessibility to the users. Teachers are encouraged to instruct their students in the use of their classroom copy of the catalog, and to let them do their own ordering whenever possible. In some classrooms, students select and order all materials. Some teachers have appointed a student librarian who prepares orders, and receives and returns materials.

A key sort charge card was developed by the Director, which provides for efficient charging and discharging of materials, and facilitates the building of an evaluation file. Cards are notched by village to quickly and efficiently record the location of materials, and to quickly retrieve cards when discharging collections of materials returned from any village. Loan dates are also notched with allowances up to nine weeks as well as long term loans. This system by itself represents very innovative management of a complex set of access and delivery problems.

Students in the Bethel Agency schools clearly have "access to a variety of materials which provides opportunity to grow in ability to make choices....and to learn how to make self-directed searches for knowledge," as national standard guidelines propose.

The key to efficient delivery and return of materials is the airplane. Materials are delivered to village schools by planes contracted as mail carriers. There are no highways in Southwestern Alaska by which to reach the villages scattered across approximately 100,000 square miles. All materials and personnel must be delivered by air. The weather in this part of the country is always unpredictable and severe, yet seldom has it taken longer than one week to receive materials in any school in the region.

Summary. All library/media materials in the collection of the Center are readily accessible to students and teachers in the Bethel Agency schools. Delivery and retrieval of materials are accomplished with outstanding efficiency, especially in view of the extreme climatic and logistic constraints.

Facilities. The nature of the population served by the Bethel Center is unique, as are the conditions under which services must be provided. The facility in which the Center is housed is also unique and quite different from facilities located in urban settings in which the population served is close at hand and physically enters the facility to utilize its resources.

The Center is housed in a self-contained complex of offices and living quarters which was built by the Air Force after World War II as part of the Distant Early Warning system. The complex houses the

Bethel Agency Offices of the Bureau of Indian Affairs. The Center is part of Agency operations headquartered here.

Physical facilities for housing the library and media collection, for production, and for shipping and receiving are beginning to be strained after four years of rapid growth. It appears that there would be additional space available in the complex for expansion. However, there are many services provided by the Agency which require office space, and the priorities of the Center must compete with other units. It is fair to say that if the Center were to increase its staff to any degree additional space would have to be found. Even now such functions as copying, cataloguing, shipping and receiving are crowded among the stacks, and much of the work is done in the corridor. The Center has limited space of its own for instructional or conference purposes. Space for meetings or workshops is available in a large game room which is located adjacent to the television studio/shop, as well as in the television facility itself.

Summary. The Bethel Library/Media Center is housed in a facility which is very different from its urban counterpart which is usually designed to meet specific needs and specifications. However, in a location where space is at a high premium the Center has been quite fortunate in terms of its facilities. Nevertheless, if the Center is to increase its services and the size of its collection, additional space will be essential.

III. Teachers' Perceptions of the Quality of Materials and Services

Introductory discussion

The overall evaluation objective being addressed involves determining the extent to which the Bethel Regional Library/Media Center materials and services are exemplary. The first approach to the question involving a comparison with national standards was reported in the preceding section. A second aspect of the objective focused on judgements of teacher/users of the Center's materials and services.

The teachers in the 32 Bethel Agency schools come from all parts of the United States, and bring with them teaching experience in a great variety of schools and communities, from large urban systems to small rural districts. The researchers felt that the attitudes and opinions of the teacher/users concerning the Library/Media Center materials and services would constitute a dependable measure of their quality. The recording of attitudes and opinions is most uniformly accomplished through some kind of standard instrumentation. The questionnaire is the most efficient and widely used form of instrumentation to accomplish this kind of measurement, and a decision was reached to develop a questionnaire which would sample teacher opinions of several aspects of the Center's operation. The questionnaire sought the opinions of teacher/users in six information categories:

i) The efficiency and effectiveness of the delivery system

ii) The quality and appropriateness of the library/media materials

iii) Use of the materials

iv) Perceived learning outcomes

v) Perceived impact on the village

vi) Recommended improvements

Subjects, materials, and methods

The investigators developed a Library/Media Use Questionnaire which included a section for each of the six information categories and a total of 50 items.

The questionnaire was delivered to all 124 teachers in the 32 Bethel Agency schools. Teachers were instructed not to identify themselves by name. To further assure anonymity of the respondents each questionnaire was accompanied by a stamped pre-addressed envelope in which to mail the completed instruments directly to the investigators.

Most of the items (45 of 50) on the questionnaire were designed to elicit responses on a Likert type scale. That is, a four-point response scale was used on which the respondent could indicate agreement or disagreement with a statement by entering a number from 1 to 4 representing as follows:

1 = strongly disagree
2 = disagree
3 = agree
4 = strongly agree

Statements on the questionnaire were both positive and negative.

The 93 questionnaires received represented a 75 percent return. Responses were tallied and punched on computer cards for purposes of analysis.

Two separate analyses were made using the Likert program. The first analysis produced the composite attitude of all respondents (n = 93) on 45 items. Program output (Table IV) shows the mean response for the lowest 27 percent (n = 26) and the highest 27 percent (n = 26) of responses on each of the 45 items.

The second analysis (Table V) reflects the perceptions and attitudes of the teachers in the 12 selected high and low library/media use schools (n = 36). The purpose of this analysis was to ascertain whether the opinions held by this selected group would vary markedly on particular items from those of the entire group. As in the first analysis the program output shows the mean response for the lowest 27 percent (n = 11) and the highest 27 percent (n = 10) of responses on each item. In this analysis 29 percent of the total teaching population is represented, and the lowest 27 percent of that number comprises 9 percent of the total teaching population.

The mean responses for the highest 27 percent and lowest 27 percent for each item for both analyses are presented in bar graph form in Table IV and Table V.

In this format, overall attitudes and perceptions are rendered immediately apparent as are attitudinal differences on specific items when only the High and Low Use school responses are analyzed.

Five questionnaire items ask about classroom ordering and managing of library/media materials. These items were scored separately since they do not lend themselves to rating scale presentation. Summary data on these five items are found in Table VI.

In addition to checking questionnaire items, respondents were invited to comment on most of them. The number of comments on the 26 items ranged from a high of 40 to a low of three.

One item which was commented on most heavily concerned the matter of preference for a regional library collection rather than a local collection. Of the 40 comments, 28 respondents explain why they prefer the Regional Center. Ten respondents feel a local collection would be convenient if it were possible, but recognize that it is not possible for a variety of reasons. The extensive and efficiently organized Regional Center has obvious advantages that a local collection could never achieve, for reasons of staffing, space, and money.

A majority of all comments expressed enthusiasm for the Regional Library/Media Center, across a wide range of questionnaire items.

Results

insert TABLES IV and V here

Delivery system. A majority of all respondents (Table IV) agree that orders are filled accurately and that materials are appropriate for their students.

Items three through seven are negatively-worded, and a majority

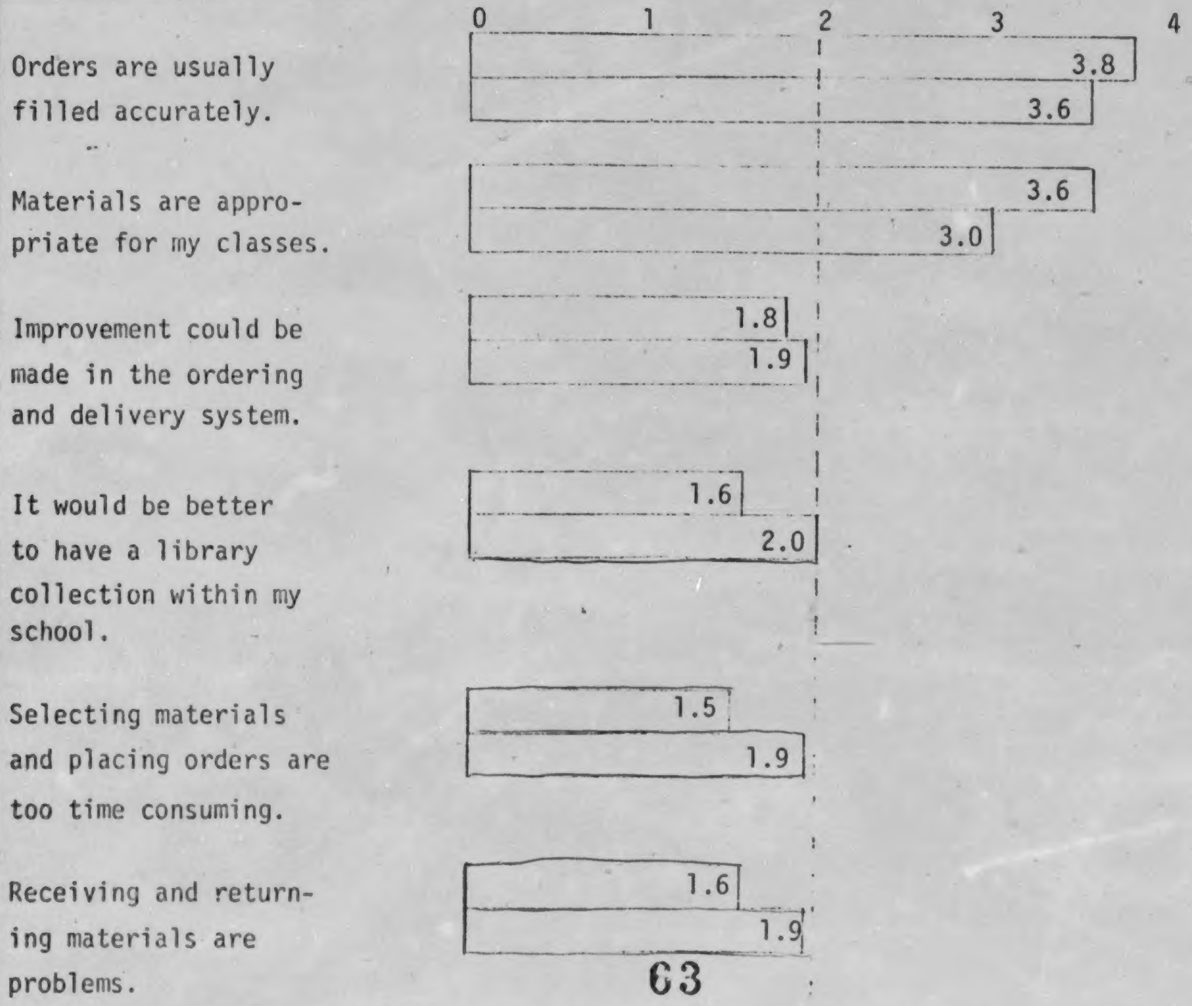
Library/Media Use Questionnaire:
All Respondents(n= 93)

Scale
1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

Note:
Upper Bar represents
Highest 27% of
Responses;
Lower Bar represents
Lowest 27% of
Responses

Item

tion A - Delivery System



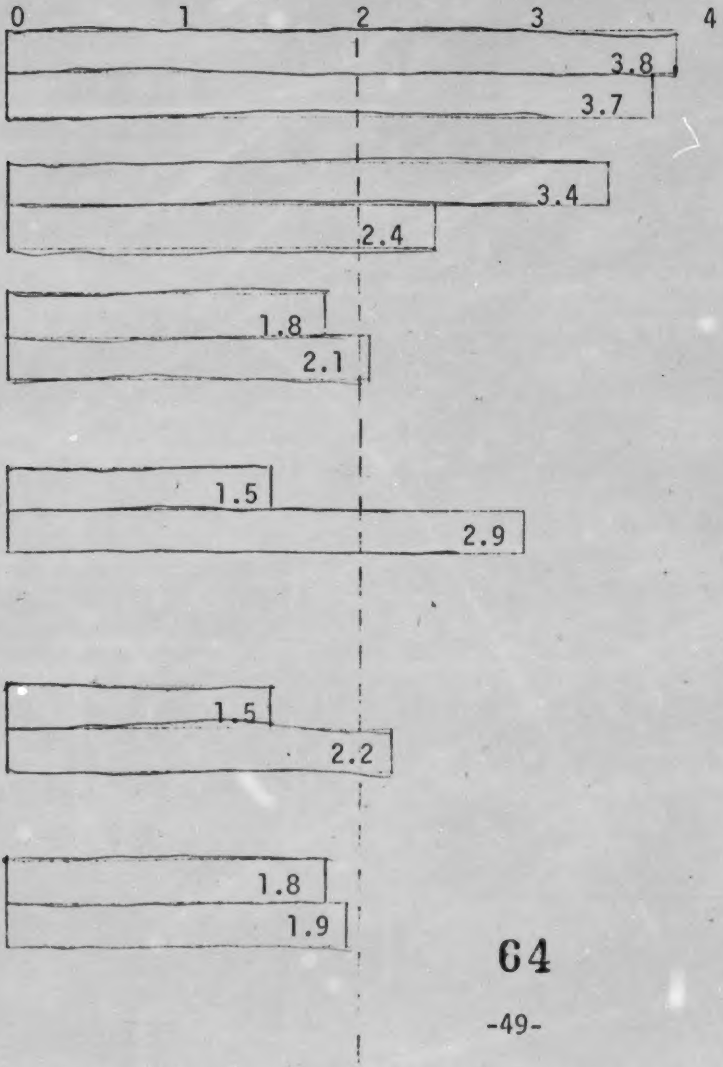
continued

Library/Media Use Questionnaire

High Use (n= 10) and Low Use (n= 11) Schools Only

Scale
1 = Strongly Disagree
2 = Disagree
3 = Agree
4 = Strongly Agree

Note:
Upper Bar represents
Highest 27% of
Responses;
Lower Bar represents
Lowest 27% of
Responses



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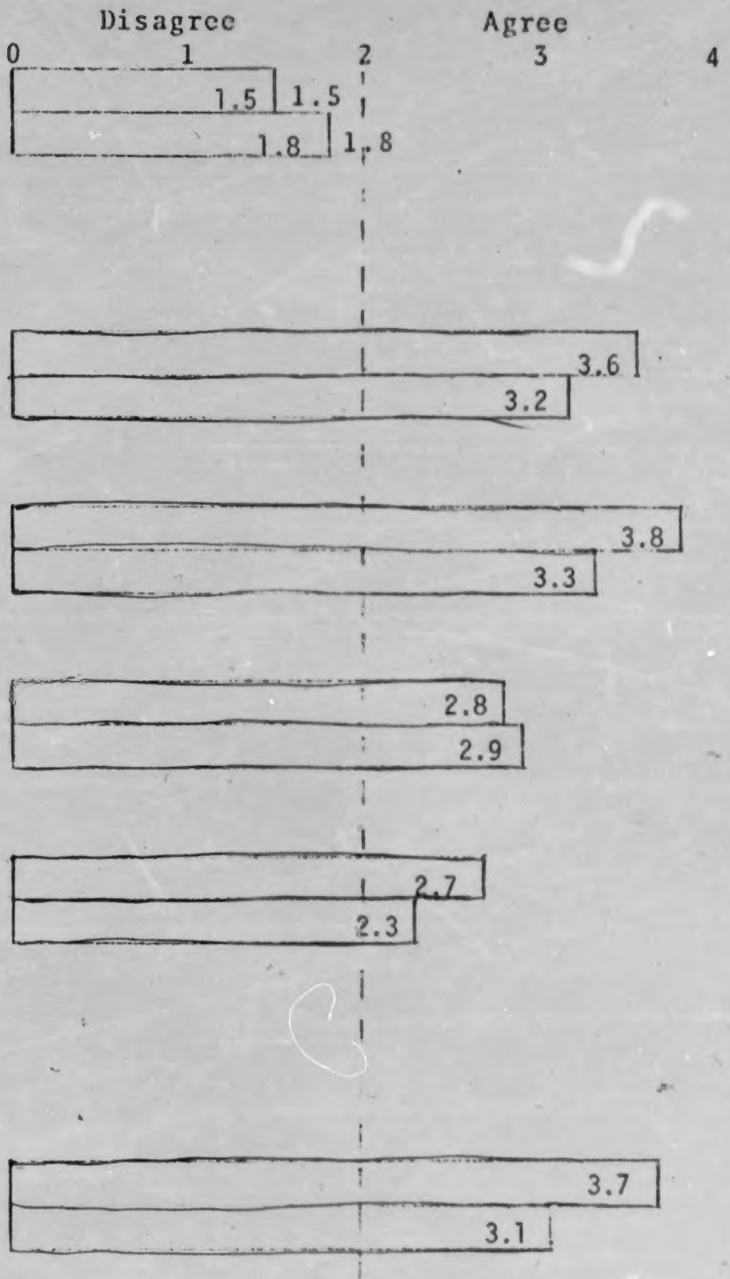
continued

(All Respondents, n= 93)



Item

Organizing the materials in my room is a problem.

Content of Orders

Students are usually satisfied with the materials.

A good variety of materials is available for selection.

Materials are used mostly for students' independent time.

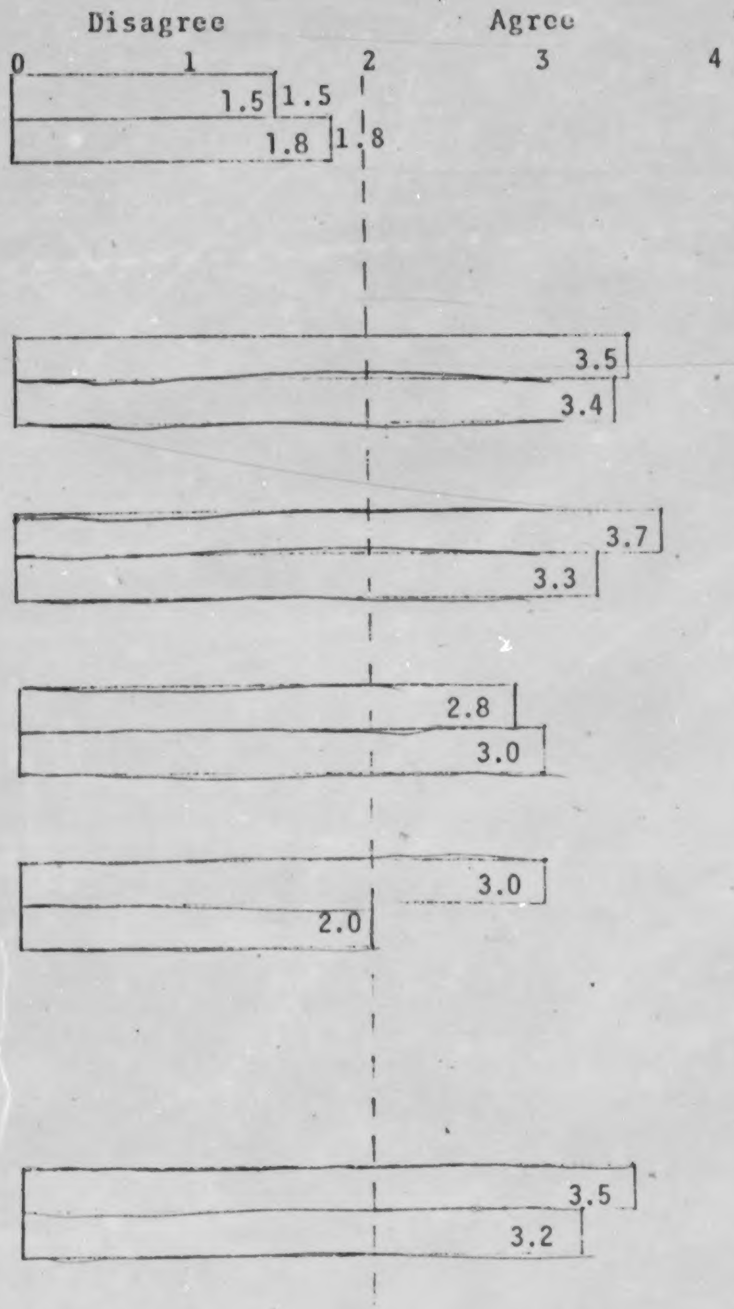
Students are capable of using the catalog and ordering appropriate materials for themselves.

Use of Materials

The Library/Media services are helpful to me in basic curriculum planning for various subjects I teach.

continued

(High Use (n= 10) and Low Use (n= 11) Schools Only)



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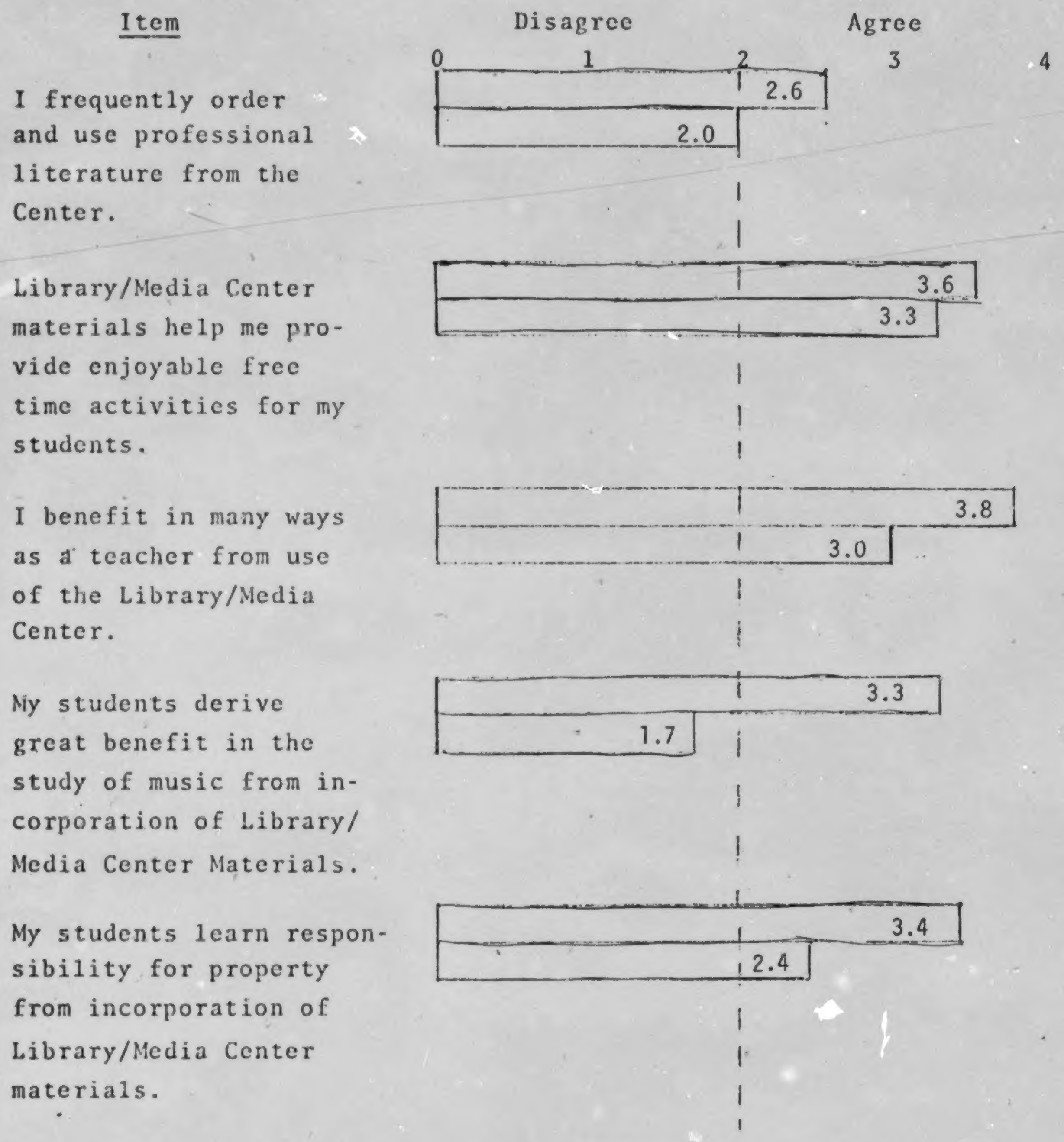
(All Respondents, n= 93)



I frequently order and use professional literature from the Center.

Library/Media Center materials help me provide enjoyable free time activities for my students.

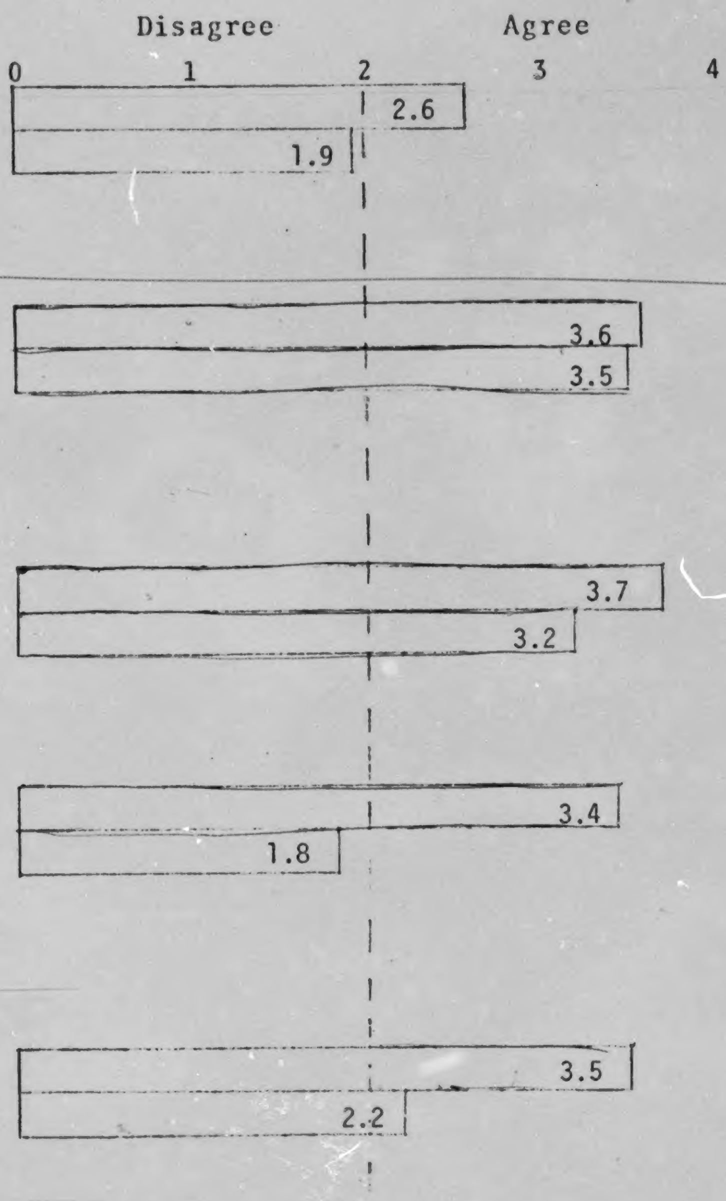
I benefit in many ways as a teacher from use of the Library/Media Center.

My students derive great benefit in the study of music from incorporation of Library/Media Center Materials.

My students learn responsibility for property from incorporation of Library/Media Center materials.

continued

(High Use (n= 10) and Low Use (n= 11) Schools Only)



continued

(All Respondents, n= 93)

Item

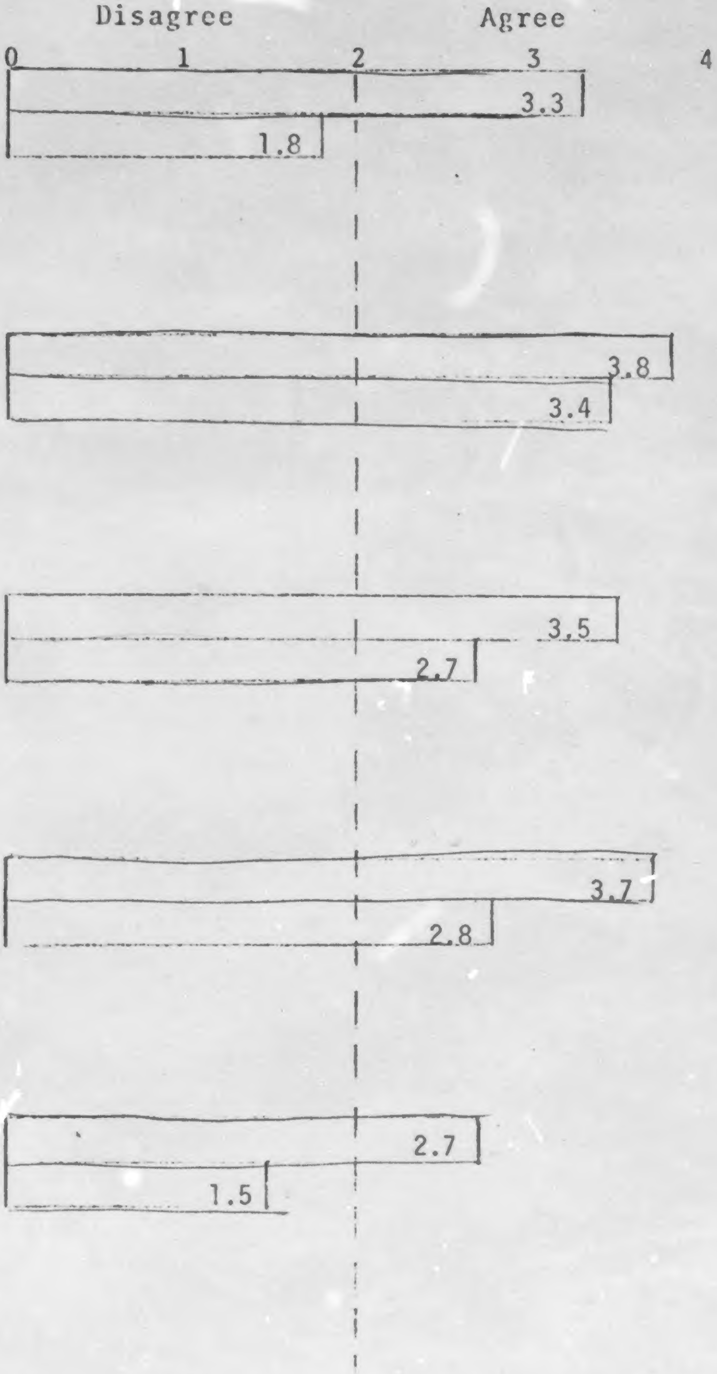
My students have developed library skills as a result of incorporation of Library/Media materials.

My students benefit in independent reading skills as a result of incorporation of Library/Media Center materials.

My students are doing better in reading classes as a result of incorporation of Library/Media Center materials.

My students benefit in social studies as a result of incorporation of Library/Media Center materials.

My students benefit in mathematics as a result of incorporation of Library/Media Center materials.



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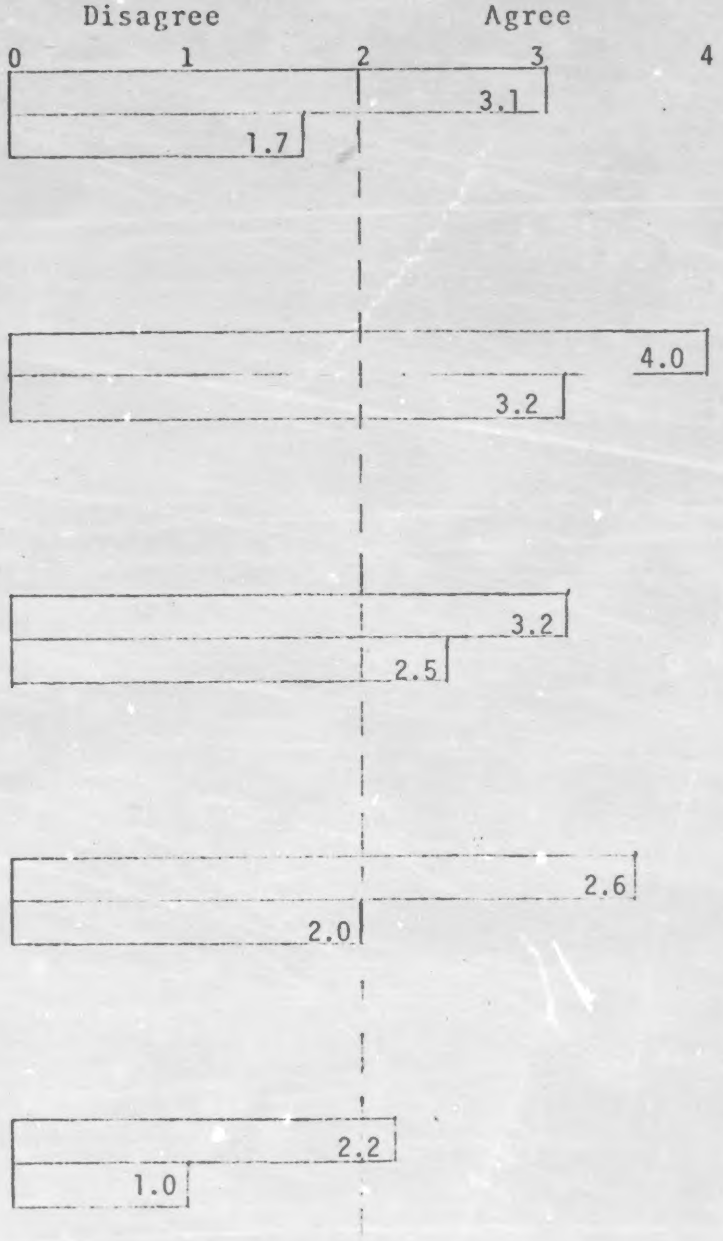
(High Use (n= 10) and Low Use (n= 11) Schools Only)



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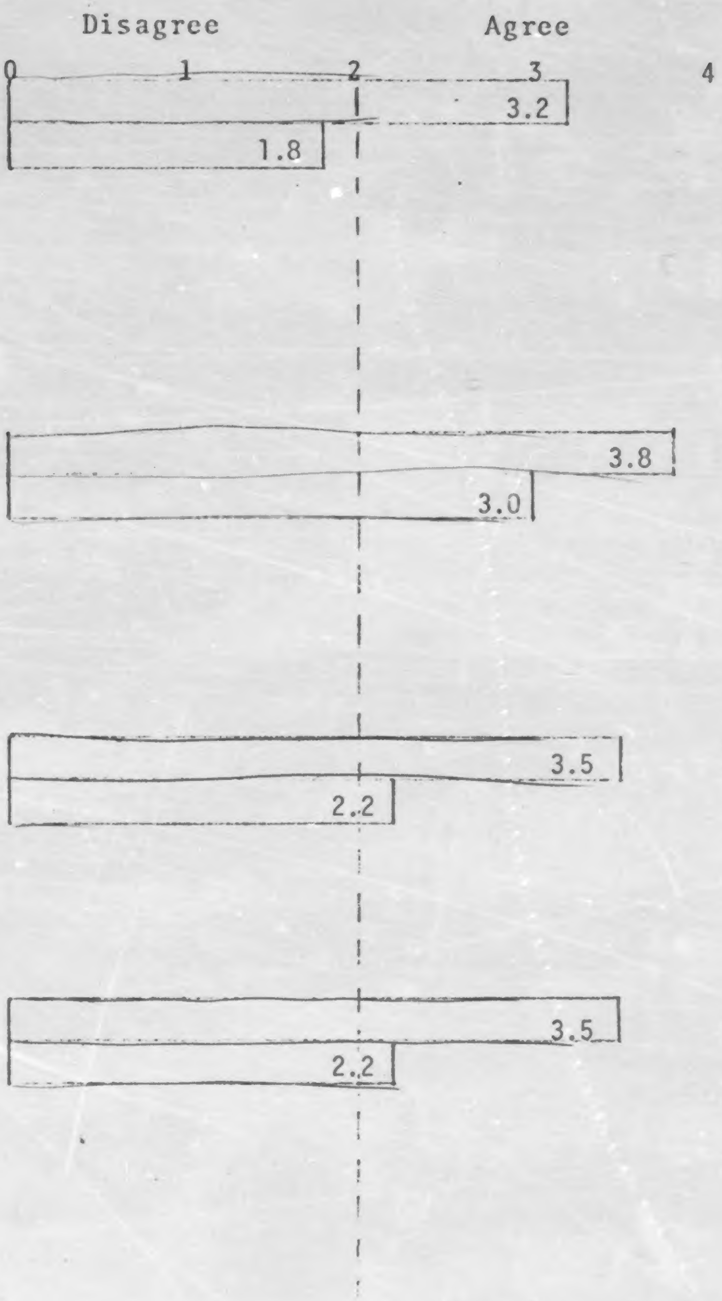
continued

(All Respondents, n= 93)

Item



My students benefit in the study of art as a result of incorporation of Library/Media Center materials.

Outcomes

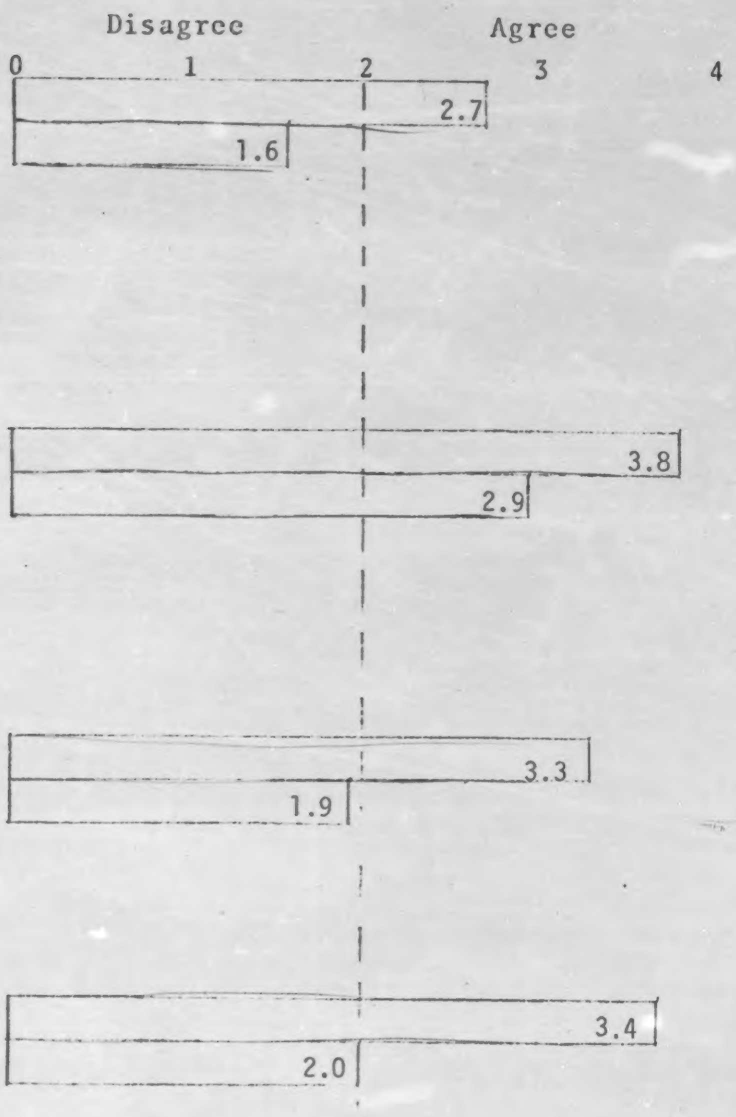
My students are more frequent independent readers as a result of having the Regional Library services available.

My students comprehend better what they read as a result of being able to select from a variety of materials.

I have observed specific improvements in my students' interest in reading since the Regional Library services have been available.

continued

(High Use (n= 10) and Low Use (n= 11) Schools Only)



continued

(All Respondents, n= 93)

Item

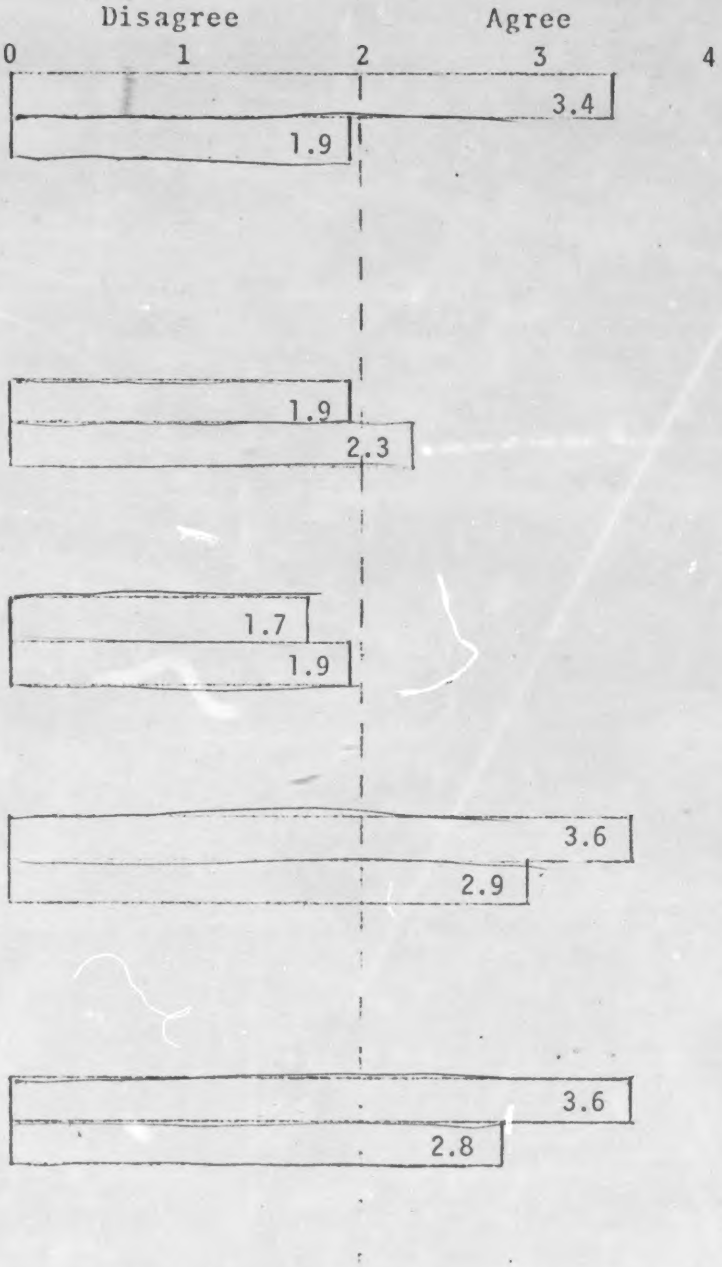
I have observed specific improvements in my students' reading ability as a result of using materials from the Regional Library.

Library/Media materials are generally "over the students heads" in terms of language.

Library materials are generally over the students' heads in terms of content.

Materials received from the library have broadened my students' perspective about the world.

Library/Media Center materials have helped me design a better curriculum for my students.



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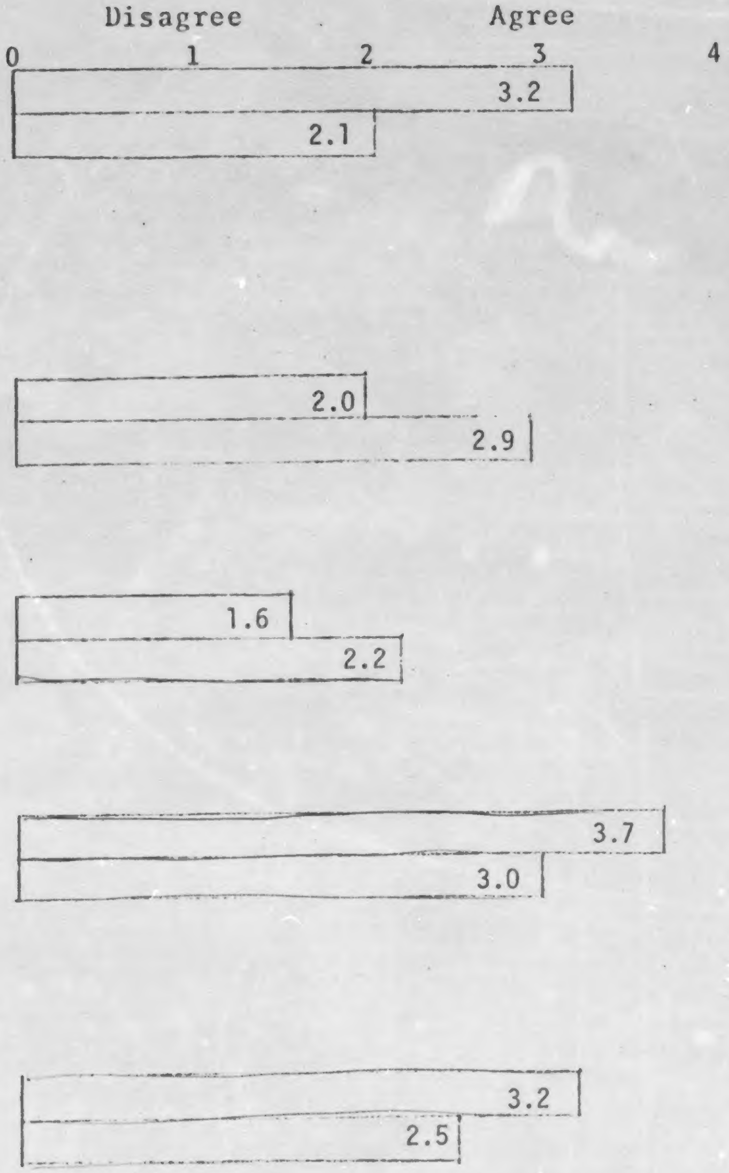
(High Use (n= 10) and Low Use (n= 11) Schools Only)



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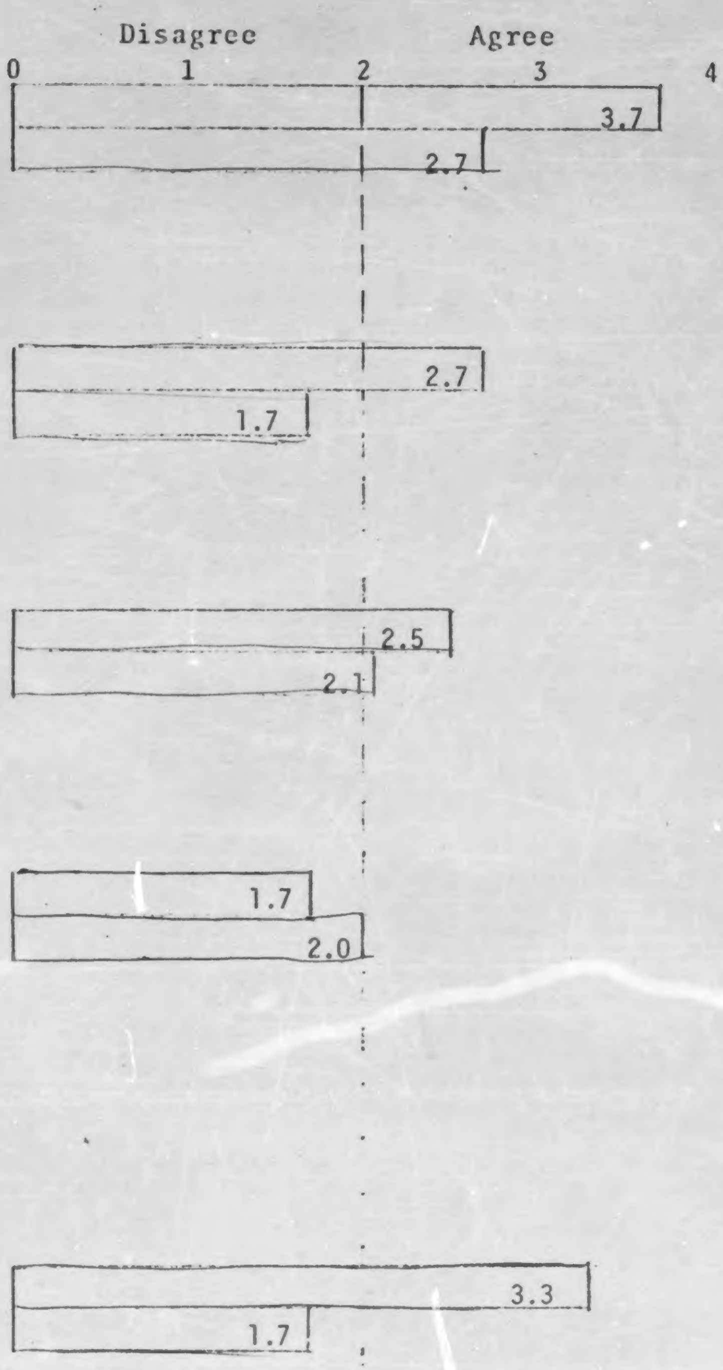
(All Respondents, n= 93)



Item

I am a more effective teacher as a direct result of having the Regional Library/Media services available.

I have altered my class schedule to accomodate ordering and using materials from the Center.

Having our own school library collection would not noticeably affect the way I plan my program.

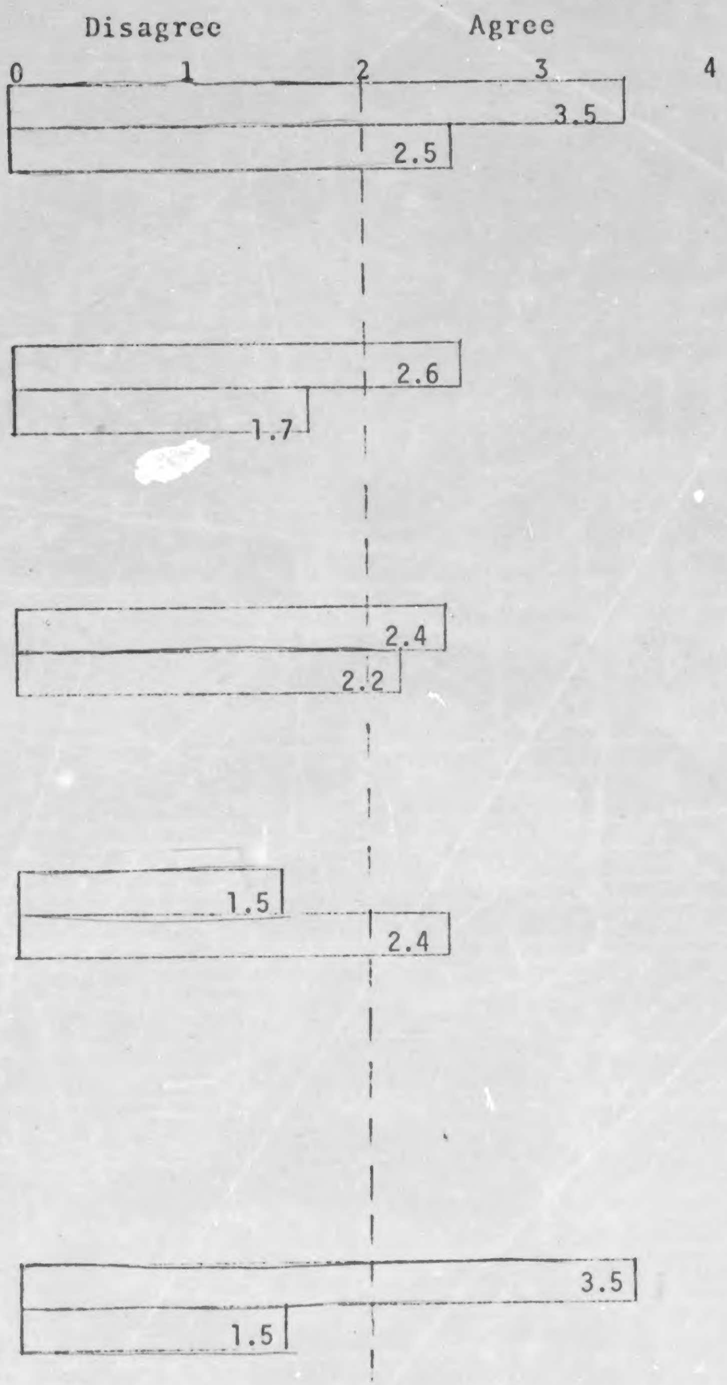
My students would benefit just as much from my program if we had our own school library collection.

Perceived Impact on the Village.

I have observed a definite increase in reading at home on the part of my students.

continued

(High Use (n= 10) and Low Use (n= 11) Schools Only)



continued

(All Respondents, n= 93)

Item

Some village parents are reading with their children from library books they take home.

Quite a few parents are requesting materials from the library.

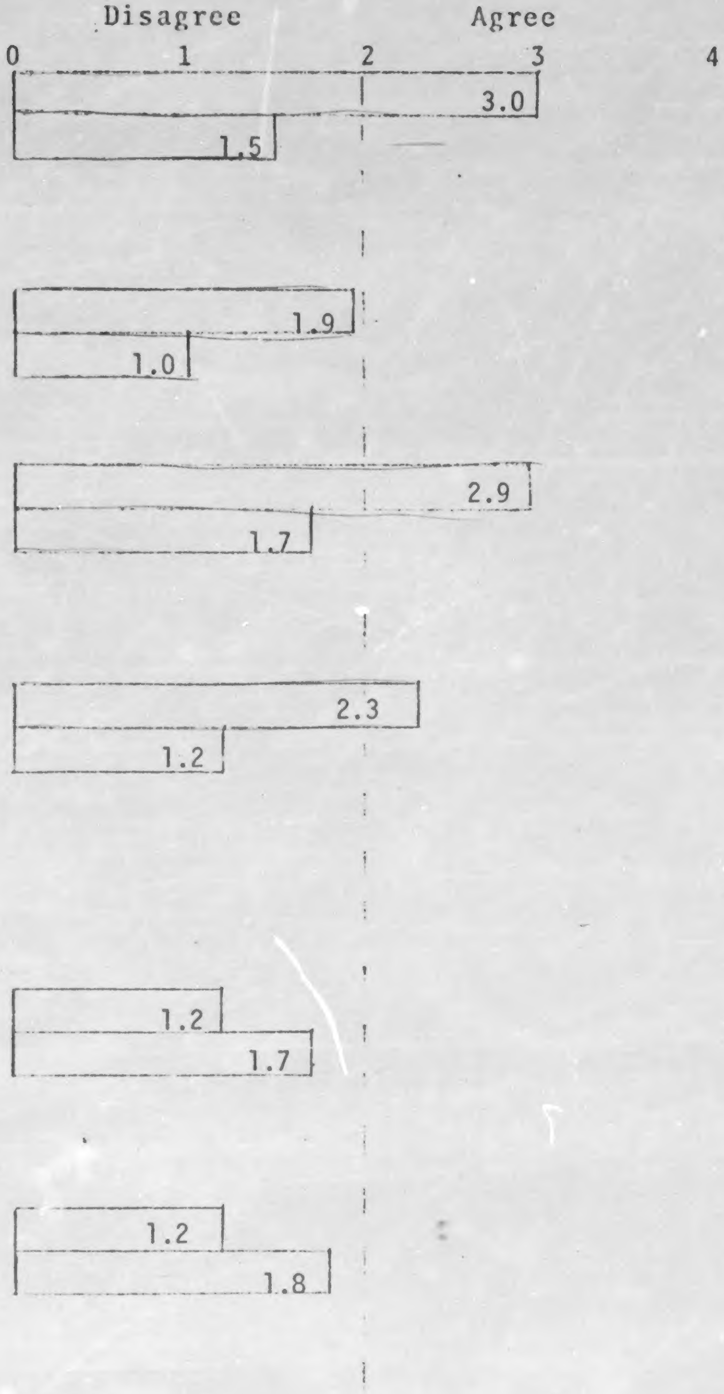
A number of parents are buying books for their children or themselves.

A number of villages now have TV probably as a result of seeing it at school.

Recommended Improvements

Content of the Library/Media Center materials should be more appropriate.

The language of library/media materials should be more appropriate for my students.



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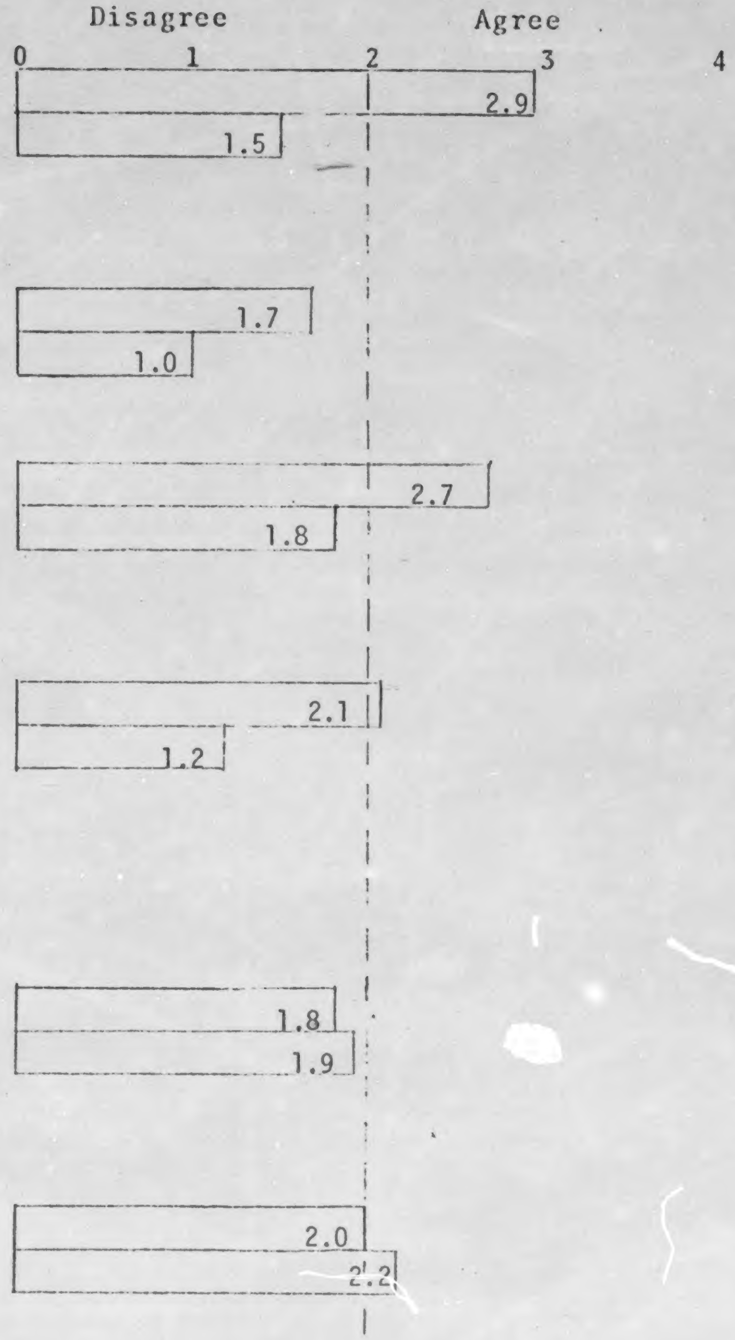

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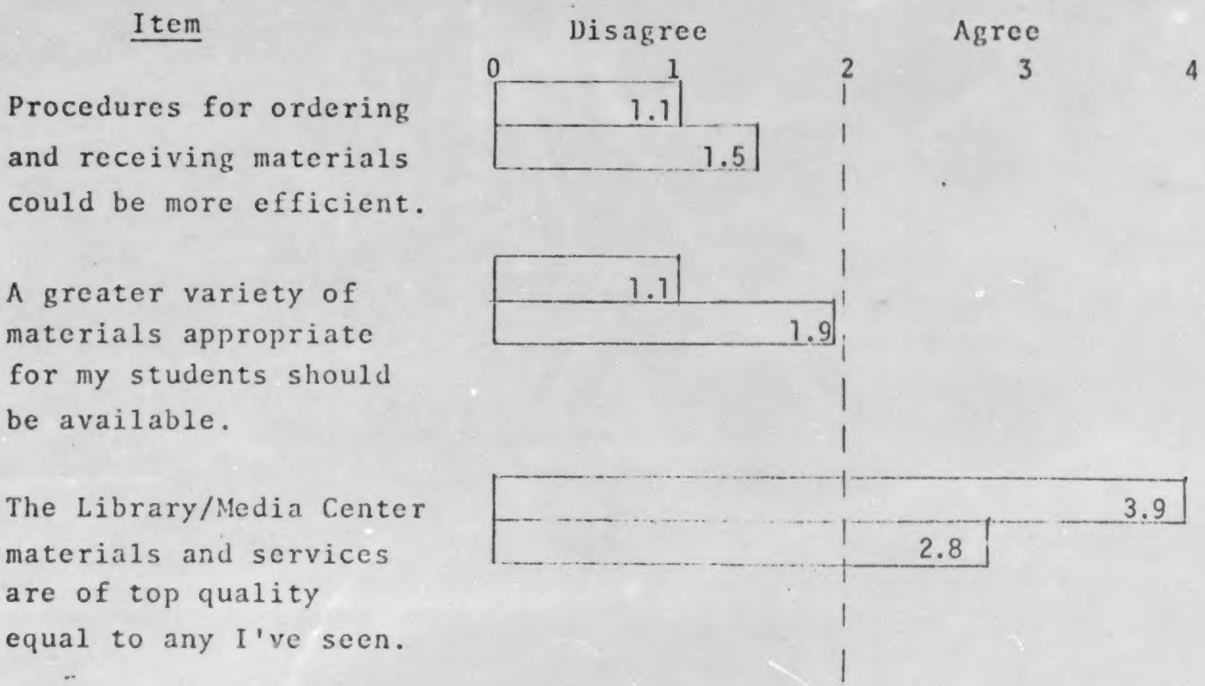
(All Respondents, n= 93)



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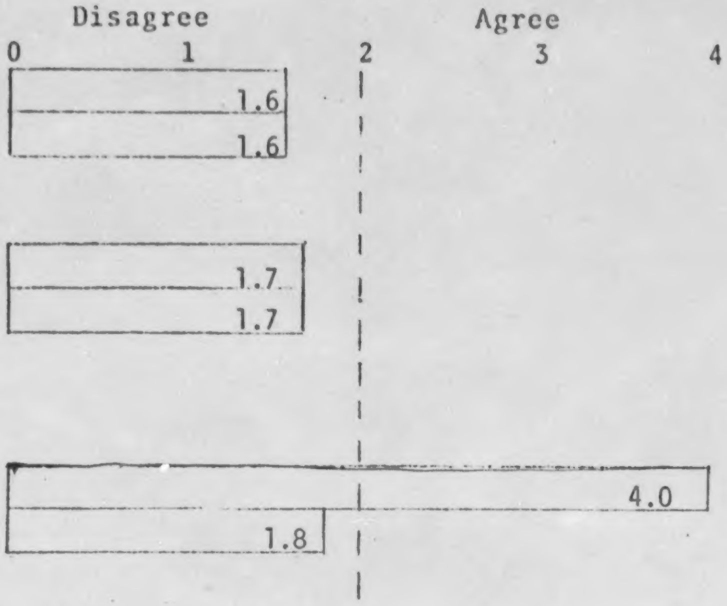

of all respondents disagrees with each of them. For example, both the highest and the lowest 27 percent of respondents prefer the Regional Center to a local library collection within the schools. In addition, the majority of all respondents agrees that neither the materials nor the services provided by the Center are in need of improvement. A majority also agrees that the materials and services are of top quality, equal to any library facility experienced before (item 45).

Table V, reflecting the opinions of teachers in the 12 High and Low Library Use schools, shows general agreement with all of these items by the teachers in the selected High and Low Library Use schools. Slight exceptions are exhibited by the lowest 27 percent of responses from this group on three items. These 11 teachers show very slight agreement, by a rating of 2.1, that improvement could be made in the ordering and delivery system. They also exhibit preference (a rating of 2.9) for having individual school libraries. In addition, they indicate some agreement (2.2) that selecting and ordering of materials is too time consuming.

Item 45 responses are of particular interest for this aspect of the evaluation. The purpose of the questionnaire, as stated earlier, was to provide a measure of the quality of the Bethel Library/Media Center's materials and services as perceived by teacher/users. This item stated explicitly that, "The Library/Media Center materials and services are of top quality equal to any I have seen." The highest 27 percent of all respondents (Table IV) give the item a rating of 3.9 on the 4.0 scale, indicating strong agreement with the statement. The lowest 27 percent give it a rating of 2.8, also a solid positive response.

Analysis of responses from the teachers in the selected High and Low Library Use schools produced a 4.0 mean rating by the highest 27 percent of respondents, and a 1.8 mean rating by the lowest 27 percent. From these data we may conclude that approximately 90 percent of all respondents probably feel that the Center is outstanding.

insert TABLE VI here

With regard to ordering and organizing Library/Media Center materials in the classroom, the majority of teachers both select and order the desired materials. A majority of teachers also indicate that they organize and take care of the materials once they are received. In less than half of the cases (41 percent) students are made responsible for their own selecting and ordering of materials. In far fewer cases (16 percent) students take responsibility for the materials they order once they arrive.

Orders are generally placed about once a month, with materials usually arriving within one week of ordering. Books rank first among the types of materials ordered (68 percent of the orders), with other kinds of audio-visual materials making up the remaining 32 percent of orders.

Content of orders. A majority of all respondents (Table IV) give the quality and variety of library/media materials high ratings. There is very little difference between the mean ratings of the highest

TABLE VI

Ordering and Organization Procedures of Library/Media Center Materials in the Classroom

Procedures	Percent of responses
1. Ordering responsibility:	
Teacher selects and orders most materials	44%
Teacher selects and orders what teacher wants; students select and order what they want	41
Teacher selects materials and has someone else write the order	9
Students select from catalog and teacher writes the order	4
Other ("not enough time to order")	2
2. Frequency of ordering:	
About once a month	44%
About twice a month	25
Less often than once a month	15
About once a week	10
No response	6
3. Materials ordered are usually received:	
Within 1 week	56%
Within 2 weeks	28
In less than a week	11
No response	5
4. Responsibility for organization and care of Library/Media Center materials in the school:	
Teacher, using a central location	66%
Individual students who order materials	16
Teacher aide	9
A student librarian	5
Other ("we all share")	4

continued

TABLE VI, continued

5. Types of materials ordered:

Books	68%
Video tapes	12
Filmstrips	8
Movies	6
8 mm. film loops	5
Audio tapes and records	1
Kits	0

27 percent and the lowest 27 percent of all respondents on items eight, nine and ten. There is also agreement by a majority of all respondents that students are capable of using the catalog and ordering appropriate materials (item 11).

The attitudes of respondents (Table V) in selected High and Low Library Use schools parallel those of all respondents (Table IV). However, there is a somewhat stronger feeling expressed by the highest 27 percent of these respondents that students are capable of using the catalog and ordering appropriate materials for themselves, and a matching stronger feeling expressed by the lowest 27 percent that students are not capable of doing so.

It is interesting to note that the lowest 27 percent of teachers in the selected High and Low Library Use schools agrees somewhat more strongly that library/media materials are used mostly for students' independent time (item 10).

Use of materials. A majority of all respondents agree that library/media services help them in basic curriculum planning, and that they benefit in many ways from use of the Center. There is some discrepancy between the high 27 percent and low 27 percent in the extent to which they order and use professional literature from the Center. The mean of the lowest 27 percent of responses is negative, while the mean of the highest 27 percent is 2.6, a fairly strong positive response.

Both tables reflect considerable difference of opinion between the highest 27 percent and the lowest 27 percent of responses concerning learner benefits in specific subject areas derived from Library/Media

Center materials. These differences are especially pronounced concerning the study of music, mathematics, art, and development of library skills. There is general agreement that use of library/media materials results in benefits to learners in reading and the social studies. There is also general agreement that "materials help me provide enjoyable free time activities for my students."

The pattern of responses in Part C (items 12 through 23) is quite consistent between the means of all responses (Table IV) and the means of responses from the 12 selected schools (Table V). An exception seems to be perception of benefit in the social studies. The mean for the lowest 27 percent of all respondents is 2.8, a solid positive response, while the mean for the lowest 27 percent of High/Low Use schools' responses is 2.0, a negative response.

Learning outcomes. Several interesting observations may be made about the ratings on items 24 through 35. A majority of all respondents (Table IV) indicate that their students are more frequent independent readers as a result of having the library services. There is also general agreement that language and content of materials are appropriate and that students' perspectives about the world have broadened as a result of the services.

A solid majority of all respondents agree that they are more effective teachers and curriculum designers as a result of using Library/Media services. A majority of all respondents also indicate that their students would not benefit as much from their programs if they had their own school library rather than Center services.

Three items reflect differences of opinion between the lowest 27 percent and the highest 27 percent of all respondents. On item 27 the lowest 27 percent indicate that they have not observed specific improvement in their students' reading ability, giving the item a mean rating of 1.9. The highest 27 percent rated the item at 3.4.

The lowest 27 percent also indicate on item 28 that they think the language of materials is over the students' heads. Item 33 shows that the lowest 27 percent of respondents have not altered class schedules to accomodate ordering and using materials from the Center.

Again the response pattern in Table V by teachers in the 12 selected High and Low Use schools is generally parallel to the pattern for all respondents. However, Table V shows a somewhat more negative response by the lowest 27 percent of responses to several items. This group seems to feel that, although its students are more frequent independent readers as a result of having Library/Media Center materials and services available, the students do not comprehend better what they read, nor have the teachers observed specific improvement in their students' interest in reading.

The lowest 27 percent also indicate that they feel the language and content of materials is "over the students' heads." They also respond that their students would benefit just as much from their program if they had their own school library collection.

Perceived impact on the village. This section of the questionnaire reflects a general difference of opinion among respondents. The highest 27 percent in both Table IV and Table V agree that they have observed a definite increase in reading at home by students, and in parents reading with children from library books taken home. The lowest 27 percent in both tables respond in the negative to these items.

The highest 27 percent indicate that a number of parents are buying books for their children or themselves. The lowest 27 percent disagree.

Recommended improvements. As reflected by items 41 through 44 in Table IV a majority of all respondents say that their students benefit a great deal in reading and the social studies. Quite a number mention science (under "other") although it was not named in the questionnaire.

We may speculate that a number of teachers do not perceive the library materials and resources as particularly beneficial in specific content areas for several reasons:

i) they may not have informed themselves of materials and resources available in these subjects,

ii) they may not have learned how to utilize a variety of materials and approaches,

iii) they don't care much for the subject themselves, or

iv) they feel their own skills and competencies are sufficient to the task.

Possibly all four reasons make a contribution, since a rich selection of materials and resources is available from the Center to assist the teacher in each of these subjects, even the teacher who lacks preparation in them. Of particular benefit should be the great selection of video tape programs. For example, one of the investigators, who was among the unfortunates who never had any art instruction in school, was amazed to learn by viewing and doing a beginning program that there are basic principles anyone can employ and produce acceptable drawings.

In reference to library skills acquisition, the lowest 27 percent of all respondents agree (item 11) that students are capable of using the catalog and ordering materials, yet they do not agree (item 18) that their students have developed library skills as a result of use of Library/Media Center materials. It seems reasonable to assume that students will learn these skills best by practicing them, and they have an opportunity to do so in the system established by the Center. It has been difficult, historically, for many teachers to accept the fact that students can learn to operate media equipment competently. It is, possibly, also difficult to accept the fact that students can be instructed in the selecting and ordering of Library/Media materials.

The views expressed on the questionnaire by the lowest 27 percent of respondents concerning development of library skills may have several explanations:

i) the teacher may not have learned how to use the Center's system in curriculum planning,

ii) the teacher may not recognize the learning opportunities for students built into the system,

iii) the teacher may not feel the need of media assistance, or

iv) the teacher may feel it is too much trouble to teach students to use the system.

Discussion

The results derived from analysis of the Library/Media Use Questionnaire provide a clear picture of the high opinion of the Bethel Center held by a large majority of the teachers in the Agency.

Many teachers added comments such as:

> Couldn't do without them!
>
> The Bethel Library is the greatest thing that has happened in the Bethel Agency as far as I'm concerned.
>
> Superior to any I have seen, especially considering the situation.

We may make a very general comparison with one study reported by the Knapp School Libraries Project. (Sullivan, 1968) The first objective of this project was to demonstrate the educational value of library/media resources and services which fully meet national standards for school libraries. In other words, each demonstration school had to have an exemplary library/media program as the criterion for being selected to participate. After two years of participation, teachers were asked to indicate observed changes in students by responding to items on a questionnaire. Negative responses averaged 29 percent. The same teachers were asked to respond to additional items reflecting changes in their individual approaches to teaching as a result of the library program. The mean negative response on these items was 32 percent.

Analysis of the response of Bethel Agency teachers (n= 93) on questionnaire items with similar themes reveals that the means of both the highest 27 percent and the lowest 27 percent of responses are solidly positive. The ratings given the Bethel Library/Media Center are, indeed, exceptionally supportive.

Some considerable difference of opinion is revealed by items which address themselves to perceived benefits to learners in certain subject matter areas. While the highest 27 percent of responses, for example, indicate that students derive considerable benefit from library/media materials in the study of music, mathematics, art, and library skills, the lowest 27 percent do not agree. A majority of all respondents agree that students benefit from library/media materials in reading and in social studies.

Answers to questions about ordering and receiving materials from the Regional Center confirm the efficiency of the Center's delivery system. The arrival of most orders within one week's time should make it highly feasible for teachers to incorporate the materials in their curriculum planning.

It appears that students could be involved to a greater extent than responses indicate both in selecting their own materials and in helping take care of the materials once they arrive. There are useful skills to be acquired from these activities. In addition, more active participation in selecting and organizing library/media materials may provide students with the benefits of having a "vested interest."

Summary and conclusions

A majority of all Bethel Agency teachers agreed that:

i) the Bethel Library/Media Center is of top quality, equal to any they have seen,

ii) the library and media materials are excellent in quality,

iii) the selection of materials is outstanding with sufficient variety to meet the needs of students and teachers at any level,

iv) the Bethel Center provides much better service than would be possible through individual school libraries, i.e.:

  - individual schools could not possibly acquire or manage a collection of comparable size or quality,
  - even if funds would allow a comparable collection for separate schools, no school would have space to accommodate it
  - a comparable local school collection would require additional staff for each school; most existing school collections are small, frequently out of date, and not presently well-organized enough to be useable; the task would be greatly increased by any increase in the size of a local school collection,

v) the Center's delivery system is first rate,

vi) the teachers are more effective as a direct result of the available library/media services,

vii) students' perspectives about the world have been broadened through materials received from the library, and

viii) student academic performance has improved in several areas as a result of using materials from the Center.

In the minority of respondents, a small percentage of teachers indicate that:

i) library materials now on hand in the schools are sufficient for their needs, and they would prefer to have individual school libraries,

ii) they would be just as effective as teachers without the Center's materials and services,

iii) students are not capable of using the catalog to order appropriate materials for themselves,

iv) they do not have time to select and order materials, and

v) they have seen better library/media operations.

We may infer from the data that these minority views are held by approximately ten percent of the teachers in the Agency. It is evident from the separate analysis of responses from teachers in the High and Low Library Use schools that this ten percent is comprised of those who have utilized the Center's materials and services the least.

Insofar as user attitude can be considered a measure of the quality of the Center's operation, materials, and services, we can conclude that these are of top quality.

CHAPTER IV

FINDINGS: IMPACT OF LIBRARY/MEDIA RESOURCES ON LEARNING OUTCOMES

1. Introduction

In what ways do the resources of the Library/Media Center have a demonstrable impact upon the reading, language and academic performance of the Alaskan children in this study? This is the major question addressed in this part of the report. In addition, attitudes and preferences of the students in one academic area, reading, are also taken into account.

A variety of approaches has been employed to ascertain this impact. Questions which have been investigated include those about reading comprehension, language proficiency, overall academic achievment, reading attitudes, and reading preferences. Nearly all of the questions have been explored on the basis of measures taken with two main groups: High Library Users and Low Library Users.

By using multiple approaches to the general question of Library/ Media Center impact on learning outcomes, it is intended that a basic difficulty will be largely counterbalanced. That difficulty is the matter of separating out, from all other real and potential effects, the effects specifically of the Library/Media Center resources. Therefore, a wide range of questions, a variety of analytical designs, and a variety of statistical tests have been employed in the study. The performance of the High Library Users compared to the Low Library

Users across the range of these approaches, rather than on a single measure, then, provides the basis for judgement as to the impact of the Regional Library/Media Center.

II. Reading Comprehension

A. High Users' and Low Users' Reading Comprehension

Introductory discussion. Among the 32 schools served by the Bethel Agency of the Bureau of Indian Affairs, there is a wide range in the average number of library orders per year placed by or for each student. The figures range from 1.0 orders per student annually for one school to 16.1 for another. The question explored in this connection assumes that library/media resources are used in the classroom once they have been ordered and received. On the basis of this assumption, it would seem that children who are High Users, by virtue of using comparatively more books and other media materials, would exhibit higher overall reading comprehension scores than would Low Users who place comparatively few library/media orders during the course of a school year.

In this respect, amount of Library Use is taken as an indicator of amount of student exposure to, and participation in, actual reading, as well as exposure to video tapes, records, filmstrips, and other media resources. Of course, it is not only sheer amount of exposure to, and participation in, reading, listening, and viewing that is to be taken into account here. There is also the fact of the vastly wider range of resources which can be experienced by students who take advantage of the Library/Media Center as compared to the books and other media available just within the village schools. Both these factors together, amount and variety of experience, should have a measurable impact upon High Users as compared to Low Users. As Smith and many others have suggested, the more reading experience, or practice, a learner has, the more fluent will be his comprehension. (Smith, 1971) To make this experience profitable, the more meaning the learner can bring to the task, along with language skill, the better. The advantage of more, as well as a greater variety, of language experience and vicarious experience through library materials would seem to lie with the High Users rather than the Low Users of Library/Media Center resources.

Research hypotheses. High Users at every grade level from two through six will score higher than Low Users in these grades on cloze tests of reading comprehension.

Subjects, materials, and methods. Subjects whose cloze tests are included in this part of the study are 479 students in grades two through six, in 12 schools of the Bethel region, Bureau of Indian Affairs. The breakdown by grades and by Library Use is presented in Table VII.

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insert TABLE VII here

Materials used were the cloze test scores, as described for each grade level in Chapter II of this report.

TABLE VII

Subjects by Grade Level and Library Use Category

Grade:	Two	Three	Four	Five	Six	
High User	50	45	45	44	41	
Low User	46	58	65	38	47	
Total	96	103	110	82	88	479

For this part of the study, the cloze tests were scored by the exact word procedure, in which only the exact work which has been deleted is accepted as correct, except for minor misspellings. Misspellings which would change the meaning (e.g., wear for where) were not accepted as correct. Responses which exactly match the deleted words are the most valid measures of comprehension, although including synonyms as correct responses yields a slight increase in the correlations between cloze scores and conventional comprehension tests. (Bormuth, 1968; Taylor, 1953; Rankin, 1957; Ruddell, 1963)

Null hypotheses. There will be no significant differences between the cloze scores of High Users and Low Users at any grade level, from two through six.

Statistical treatment. Separate analyses of variance for unequal ns were employed for each grade level. Individual student scores were used.

Results. The differences between High User and Low User scores were found to be statistically significant ($p < .01$) for every grade level tested, with the High Users achieving higher scores than the Low Users.

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insert TABLE VIII here

Table IX presents the grade level mean cloze scores for each school in the study. A double asterisk (**) marks the two schools

TABLE VIII

Results of Analyses of Variance of Cloze Scores for Grades Two through Six

Library Use:		High		Low
Grade Two	Mean	8.08		4.22
	Std. dev.	6.13		7.14
	n: 96	F: 8.12	$p < .01$	
Three	Mean	20.51		7.91
	Std. dev.	13.77		11.98
	n: 103	F: 24.28	p .01	
Four	Mean	12.00		4.46
	Std. dev.	9.99		6.81
	n: 110	F: 22.19	$p < .01$	
Five	Mean	20.61		6.53
	Std. dev.	10.59		11.93
	n: 82	F: 32.08	$p < .01$	
Six	Mean	25.34		15.19
	Std. dev.	14.40		13.17
	n: 88	F: 11.92	$p < .01$	

which are operating bilingual programs. A single asterisk (*) marks schools in which teachers perceive their students as being predominantly English-speaking. It should be noted that a bilingual school is included in both the High and Low Use groups.

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insert TABLE IX here

Discussion. It is reasonable to expect that students who actively participate in the library/media program will exhibit higher reading comprehension scores than students who take less advantage of library materials. This is the outcome indicated by the statistical analyses. Thus, the prediction is borne out, and the null hypotheses are rejected.

However, several factors merit consideration in interpreting the results. First, it should be noted that of all the mean scores presented in Table VIII, none reflects performance even at the level conventionally held to be the "instructional reading level" of 75 percent accuracy in comprehension scores. It follows, of course, that neither do any of the mean scores reflect the "independent reading level" of 90 percent accuracy in comprehension scores.

A special point needs to be made here about these two reading levels, with respect to cloze testing. In cloze tests of reading comprehension, 44 percent accuracy generally corresponds to the 75 percent level as measured by conventional reading comprehension tests, while 57 percent accuracy generally corresponds to the 90 percent comprehension level on conventional measures. (Bormuth, 1968; Peterson, Paradis, and Peters, 1973)

TABLE IX

Grade Level Mean Scores on Cloze Tests of Reading Comprehension:
High Library Users and Low Library Users

Grade:					
School:					
High Users					
1*	11.00	37.00	19.40	11.33	35.25
2*	11.66	41.00	19.50	17.50	30.63
3*	2.75	14.67	11.83	22.00	22.25
4	13.73	16.29	16.00	26.60	28.50
5**	.75	13.45	10.00	19.80	31.67
6	5.52	26.36	10.33	23.00	15.62
Low Users:					
7	2.50	.40	1.50	6.00	15.45
8*	1.88	13.70	11.33	17.14	25.00
9**	1.00	4.37	5.56	4.71	6.00
10*	13.10	27.89	13.73	27.50	18.67
11	4.50	12.00	5.44	22.50	17.33
12*	6.75	20.86	12.17	18.83	20.00

*English-dominant in language, according to teachers' perceptions.

**Children in kindergarten through grade four in these schools were in bilingual programs or had just entered fourth grade from them 1974-75.

For second graders in this study, then, 75 percent comprehension (or 44 percent accuracy) would be reflected by a raw score of at least 22 correct words of 50 possible which could be filled in. For third through sixth graders, this instructional level would be indicated by a raw score of at least 44 correct responses of the 100 possible. The independent, or 90 percent, comprehension level would call for a score of at least 28.5 for second graders, and at least 57 for third through sixth graders.

In searching through individual students' cloze scores, it was found that eight students of the 479 tested scored at the 75 percent comprehension level, and only two had scores at or above the 90 percent comprehension level. Taken at face value, this would indicate that the vast majority of students tested (both High Users and Low Users) were poorly prepared to comprehend reading materials at their grade level of readability, even at the instructional level.

There are several points to consider here, in light of such relatively low performance by the students. First, this performance may be a function of "inadequate grasp of the language" of the reading materials, as Hatch (1974) has suggested. This problem, Hatch concludes, is a major shortcoming exhibited by second language readers. Here, it should be noted that some students in both the High User group and the Low User group are perceived as predominantly Eskimo speakers, but not all are. On the basis of teacher interviews and questionnaires, it was found that students in three of the six schools in each group are perceived as Eskimo-dominant in language, while the other three in each group are perceived by the teachers as English-dominant. Researchers have observed that cloze tests are notably more difficult for nonnative speakers of the language of the test than for native speakers. (Klare and Sinaiko, 1972, 1973) Thus, "inadequate grasp of the language" is, likely, partially accountable for the low scores of the Eskimo-dominant students in both groups.

Mean cloze scores are notably lower in grades two through four in the High Use bilingual school than in the other High Use schools. The case is similar for the Low Use bilingual school, but the relatively lower scores continue through the sixth grade. The initial year for bilingual programs in these schools was 1970-71, when the present fourth-graders (1974-75) were in kindergarten. Fifth and sixth grade scores in these schools are those of students who have not taken part in the bilingual program. While English is the main language of instruction in other schools, the children of kindergarten through grade three in bilingual schools are educated mainly through the medium of their native Eskimo language. English reading instruction in these schools begins in third grade.

Inadequate English proficiency may be held partially accountable for the generally low scores. However, it cannot explain the whole picture. Scores are low even among students perceived as English-dominant by their teachers. Along with language, it is suggested that knowledge of the world, as linguists and psychologists use the term, is another responsible factor. (cf, Fodor, Bever, and Garrett, 1974)

Knowledge of the world is the term generally used to refer to a person's mental network of meanings, of relationships among concepts, which reflects the totality of the person's background of experience. Limited experiential influences are taken to correspond to limited knowledge of the world.

A young reader's background of experience as a factor affecting reading performance has long been considered critical. (cf, Hildreth, 1954, 1972) More recent research sheds light on why this is so. (Goodman, 1973; Smith, 1971) Written material may be comprehended on the basis of at least three different kinds of cues present in the material: sentence structure, the graphic representation of the sound system of the language and the meanings represented by the phrases and sentences. This last cue, meaning, is probably the strongest ally a learning reader has, Smith points out. To make use of meaning cues, however, the reader has to have a system of meanings to bring to the printed material. The more comprehensive this system, the more readily the reader is able to understand the material. The striking isolation from much of American society experienced by the Alaskan children in this study has been remarked upon before in this report. Thus, the knowledge of the world they can bring to the task of reading books prepared for the youngsters of American society in general is quite likely limited. An analog to this situation may be found in the educational problems of the rural children of Appalachia.

With respect to the children in this study, while there is probably no substitute for firsthand experience, High Library Users appear to be benefiting from the variety of vicarious experiences availed them by the books, video tapes, filmstrips, and other media materials of the Library/Media Center to a greater degree than the Low Users. The significantly higher scores of the High Users supports this observation.

Another factor, too, may be playing a part in the overall relatively low scores of all the students. As noted before, cloze tests have been found more difficult for nonnative speakers of the language of the test than for native speakers. In addition, the further along in a cloze passage one works, the more difficult it becomes to fill in words correctly. This is owing to the fact that what words one fills in next depends heavily upon the preceding text material. If early parts of the passage are filled in erroneously, the task is even harder later on in the passage. Thus, added to the fact that the reading may well have been perceived as "hard" by the students, they may have had a discouraging perception of their own inaccuracies as they worked. Low Users, for example, left many more blanks empty than did High Users on their cloze tests.

In a random sample comprised of one third of all tested students, Low Users average about twice as many blanks left empty as High Users. Low Users total 3,371 blanks left empty, while High Users total 1,526 blanks left empty. The average is 20 for High Users and 41 for Low Users. Table X (below) indicates the blanks left empty and the number of accurately filled-in responses for the two groups.

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insert TABLE X here

In this regard, High Users appear to be better risk-takers than Low Users, perhaps willing to try to fill in blanks even when unsure

TABLE X

Sample of High and Low Users: Blanks Left Empty and Accurate Responses

High Users		Low Users	
n: 76		n: 82	
Total blanks left empty=	1,526	Total blanks left empty=	3,371
Average blanks left empty=	20	Average blanks left empty=	41
Total accurate responses=	1,404	Total accurate responses=	932
Average accurate responses=	18.50	Average accurate responses=	11.40

of their own accuracy. If this is the case, confidence is a point in favor of the High Users. In other words, the more one is willing to try, even at the risk of making mistakes, the more one is likely to "win." Smith (1971) presents arguments strongly supporting this view.

Finally, there are instructional variables that will be discussed later in this report which seem to play an important role in the students' performance on the cloze tests. For example, one such variable is the amount of teacher-guided reading and language instruction provided in the various classrooms.

B. Reading Comprehension Scores on Alaskan and Non-Alaskan Story Content

Introductory discussion. The Alaskan students' experiential background was discussed briefly in the preceding pages, in the context of their cloze reading comprehension scores. The relationship between this background and story content is the focus of the present discussion.

"Cultural relevance" is a popular theme in current proposals for improving the educational materials used among America's culturally unique or "culturally different" children. For reading instruction, a basic suggestion is that the reading material should be based upon experiences which resemble the young readers' cultural experience. (cf., Andersson and Boyer, 1969) Enhanced student self-image and high interest appeal of story content are two major benefits assumed to result from incorporating culturally relevant experiences in story content for such youngsters. (cf. Harris, 1972) A major long-range goal, of course, is better academic performance on the part of the students than they have exhibited in past years. (Zintz, 1969; Andersson and Boyer, 1969)

The roots of the "cultural relevance" theme may be traced to traditional reading theory. Reading experts have long considered it of prime importance for "the learner to have a background of experience which ties in with reading context." (Hildreth, 1972, p. 37) One current writer points out the difference in such traditional theory and recent proposals relating to the culturally unique populations of America. In brief, the former implies broadening the child's experience, if necessary, so it is matched with reading content. The latter has brought about a focus on changing the reading content so it is better matched with the child's experience. (cf., Laffey, 1970)

Current psycholinguistic theory and research suggest why it might be important for story content to resemble a developing reader's experience. Redundancy, or the fact that there are several kinds of information available to the reader from the printed page, is a key factor. As noted in the previous section, three basic kinds of information are present for a reader to take advantage of: sentence structure, graphemic representation of the language's sound system, and semantic information. Readers whose experience corresponds to the semantic information, or meaning, on the page have an advantage over readers who must rely more heavily on the other two sources of information: sentence structure and graphemic system. (Smith, 1971; Goodman, 1973)

Readability research, too, points up the importance of a reader's background of experience. In short, the more familiar the reader is with the topic he's reading about, the less important is the readability level (reading ease) of the material to the reader's comprehension. (Klare, 1963)

In the present study, High Library Users have had more exposure to the variety of resources from the Library/Media Center than have Low Users. On this basis, it is assumed that High Users have a greater knowledge of the world, or store of meanings, to bring to the task of reading both Alaskan and non-Alaskan-oriented story content. Low Users, on the other hand, should find Alaskan content easier to understand than non-Alaskan content, if cultural relevance of the material is an overriding factor. If other linguistic factors such as sentence structure and graphemic representation also figure importantly in reading comprehension for the Alaskan students, one would expect the reading scores to follow the pattern of readability levels* of the stories, regardless of whether the content of the stories is Alaskan or non-Alaskan. High Users have higher overall scores than Low Users, as was discussed in the preceding section. Whether they achieved this advantage on both types of stories, or mainly on one type of story, remains to be seen.

The Library/Media Center collection of books is the entire collection of the Bro-Dart Elementary School Library Collection Catalog. The focus is not particularly on building a collection of "culturally relevant" materials for Alaskan children. As was pointed out in Chapter I the point of view of the Center is that Alaskan students need exposure to the same quality and range of reading material available to other American students through their school libraries. Is this approach reflected in an overall advantage for the High Users on both types of material, Alaskan and non-Alaskan, in terms of comprehension scores? This is one question investigated in this part of the study.

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*Readability formulas typically reflect these factors indirectly through such measures as sentence length and syllable count.

Research hypotheses. High Users will perform with approximately equal facility on both types of story content, Alaskan and non-Alaskan. Low Users will attain higher scores on Alaskan content than on non-Alaskan content.

Subjects, materials, and methods. Cloze scores used in this analysis were those obtained from all third through sixth graders tested in the 12 sample schools. Four scores were initially obtained for each student, for two Alaskan passages and for two non-Alaskan passages which comprised each cloze test booklet. Each pair of scores was added to yield a single Alaskan score and a single non-Alaskan score for each student.

The story materials are described in Chapter II. Alaskan and non-Alaskan passages were alternated in the test booklets, arranged in all the possible orders which would retain the alternation scheme. The different versions of the test booklets were distributed randomly among the students in the classrooms. It will be recalled that stories for each grade level were prepared in all possible deletion forms, so across the entire sample of students, results were obtained which reflected fill-in responses for all the different words in each story. The exact word scoring method was employed.

Null hypotheses. There will be no significant differences between the Alaskan and non-Alaskan story scores of the High Users. There will be no significant differences between the Alaskan and non-Alaskan story scores of the Low Users.

Statistical treatment. For both High and Low Users, t tests of dependent group means were employed for each grade level. A t test for dependent group means is appropriate when comparing two scores from the same subject, as is the case here. For example, a comparison was made between Low User third grade Alaskan scores and non-Alaskan scores.

Results. As Table XI shows, High Users obtained higher scores on both Alaskan and non-Alaskan stories at every grade level from third through sixth grade.

Both High and Low User third graders have better scores on Alaskan than on non-Alaskan content, significant at the .01 level.

Both High and Low User fourth graders also have higher scores on Alaskan than on non-Alaskan content, although the difference is significant at the desired level ($p < .01$) only for the High Users.

Among fifth graders, both groups achieved higher scores on non-Alaskan than on Alaskan stories. The same is true of sixth graders. The difference is significant for High User fifth graders ($p < .01$) and for Low User fifth graders ($p < .02$). Among sixth graders the differences are not significant at the desired level ($p > .05$).

TABLE XI

Mean Alaskan and Non-Alaskan Story Cloze Scores of High and Low Users, Grades Three through Six

Story content:	Alaskan	Non-Alaskan	
Grade:			
Three			
High Use	11.91	8.60	($p < .01$)
Low Use	7.85	4.48	($p < .01$)
Four			
High Use	7.38	4.87	($p < .01$)
Low Use	3.32	1.79	($p > .05$)
Five			
High Use	8.93	11.68	($p < .01$)
Low Use	6.58	8.13	($p < .02$)
Six			
High Use	12.12	13.22	($p > .05$)
Low Use	7.38	7.81	($p > .05$)

(The higher mean scores for each group are underlined.)

Discussion. A dubious interpretation that might be made is that younger children, the third and fourth graders, are more proficient readers when the content is Alaskan in orientation, while the older children have gained the background to read more capably in materials requiring a broader experiential background. However, if the findings presented here are taken to support such an interpretation, then the abrupt change from competence with one type of story among third and fourth graders to predominant competence with another type among fifth and sixth graders is hard to explain. A more gradual trend toward capability with non-Alaskan materials with maintained facility in Alaskan materials would better support such an interpretation.

Another interpretation could be that an abrupt change in reading interests might explain the distinct difference between the type of story read most capably by younger children and the type read most capably by older children. However, as will be discussed later in this chapter, both Alaskan and non-Alaskan topics are among the top five reading topic preferences for children of both groups, from fourth through sixth grade.

The preferable interpretation is one suggested by the pattern of mean scores of the groups when viewed along with the pattern of readability levels of the two types of stories. In stories used for third and fourth graders, the Alaskan passages have a lower average readability level than the non-Alaskan story passages. In stories used for fifth and sixth graders, the non-Alaskan stories have a lower average readability level than the Alaskan stories, the reverse of the case for the younger children. Table XII presents the comparisons of mean scores and readability level averages for the Alaskan and non-Alaskan passages. The average readability level for each pair of passages was obtained by averaging the raw readability scores of the two Alaskan passages for each grade level, and doing the same for the two non-Alaskan passages used at each grade level.

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insert TABLE XII here

General language factors, more than specific factors of "cultural relevance," seem to be at work in the students' performance on the two types of cloze passages. This would be true insofar as the Dale-Chall Readability formula reflects the language factor in general, and insofar as the Alaskan and non-Alaskan passages reflect a distinction in content orientation.

The language factor includes the reader's ability to predict what is coming next in the line of print, on the basis of meaning, language structure, and graphemic cues that have come before. (cf, Goodman, 1973) Evidently, differences in meaning as conveyed by the different orientation of the two types of cloze passages was not, by itself, enough to influence differences in reading comprehension scores.

Rather, meaning, as assessed by the word familiarity factor in the Dale-Chall readability formula, along with language structure and graphemic cues appears to influence the reading performance of these children in an important way.

In addition, several factors which are related to readability and comprehension should be considered. An easier level of readability will usually yield greater comprehension than a more difficult

TABLE XII

Grade	Mean Cloze Scores		Average Readability	Story Type
Library Use:	High	Low		
Three	11.91	7.85	4.2	*Alaskan
	8.60	4.48	4.3	Non-Alaskan
Four	7.38	3.32	4.3	Alaskan
	4.87	1.79	4.6	Non-Alaskan
Five	11.68	8.93	5.1	Non-Alaskan
	8.13	6.58	5.5	Alaskan
Six	13.22	7.81	5.1	Non-Alaskan
	12.12	7.38	5.5	Alaskan

*The story type for which scores are higher for each grade level is given in the top row of each section.

level only under one or more of the following conditions:

i) the less readable material is clearly beyond the reader's usual level,

ii) reading time is limited,

iii) the reader does not have a large amount of background or experience with the topic,

iv) the less readable material is much harder than the more readable, and

v) the reader has strong motivation to read the material. (Klare, 1963)

Judging from the generally low cloze scores overall, both Alaskan and non-Alaskan stories were beyond the readers' usual levels. Relatively small differences in readability levels may have made more of a difference than if the students were tested on material of a lower readability level.

In addition, for third and fourth graders, motivation may have been stronger to read the Alaskan passages than the non-Alaskan passages. As the Reading Preference Questionnaire results reveal, Alaska is consistently among the five most-preferred topics of fourth through sixth-graders. Children and animals are not. The non-Alaskan stories for third and fourth graders were relatively "tame" stories about children and animals.

If it is assumed that the children do not have much background or experience (as in iii above) with the Alaskan content of the cloze passages, then it is possible that lack of reader background played a partial role in bringing about higher scores for third and fourth graders on the Alaskan-content passages.

"Relevance" of reading material appears to be an inadequate concept, unless given very careful delineation of the number of factors which comprise it.

The Library/Media Center philosophy of making available the wide range of story material that comprises the collection recommended by the Library Association appears to be sound. The grade level equivalent of the readability level of each book is part of the information given in the library catalog which each teacher has for classroom use. Teachers can help guide student selections so that books of appropriate readability levels are ordered. Attention to these levels appears to be important so that students are able to enjoy and benefit from the books they receive from the Center.

Summary and conclusions

Several points emerge from the preceding findings. First, High Library Users' cloze reading comprehension scores are significantly higher, generally two to three times higher, than the scores of Low Library Users, among the 479 students who were tested.

Next, very few of the scores of any of the students indicate reading proficiency at the instructional level or at the independent reading level for the particular grades in which students are enrolled. Language background, experience background, and instructional variables are likely candidates to be held accountable for this situation. Where Library Use is high, students have overcome their reading problems to a significantly greater degree than where Library Use is comparatively low.

Third, although the two bilingual programs in the school sample incorporate an ESL (English as a second language) component in their daily instruction, it is apparent that students in schools with (i) high Library Use records and (ii) instruction conducted mainly in English exhibit higher reading comprehension scores in general. Both the amount and the variety of English language input, as well as the vicarious experience, available to these students through the resources of the Library/Media Center quite likely play a role in their higher reading comprehension scores.

Fourth, High Users may be viewed as having a somewhat more enhanced knowledge of the world, owing to their greater exposure to books and other media resources, compared to Low Users. However, as Chapter III revealed, it is evident that more curricular integration of Library/Media resources could occur for both High and Low Use groups. Broadly speaking, these experiences include both written and spoken forms of English, and a wide variety of information about the world.

Fifth, readability levels of the test passages seem to be the more important factor than cultural orientation of the stories. That is, the pattern of mean cloze scores on Alaskan stories follows the pattern of readability levels of the materials, rather than the pattern of the cultural orientation of the story content.

Another point that emerged in the discussion of reading comprehension was that High Users are evidently more confident readers, or are better at taking risks in filling in their cloze test blanks. This willingness to try, even at the risk of being wrong, yielded the

High Users many more accurate responses than Low Users achieved. This is an important factor in learning to read, insofar as the more one is willing to try the more one is likely to "win."

Finally, at this point, it is well to observe that Library Use is probably an umbrella factor, covering a combination of actual classroom events which includes Library Use. Some of these classroom factors will be described in later sections of this report. Whatever the variables are which comprise Library Use, they appear to work well to the advantage of the High Users over the Low Users.

III. Language Proficiency

A. Library Use, Language Dominance, and Types of Errors Characteristic of High and Low Users

Introductory discussion. On the assumption that High Library Users have had more English language experience, through their use of library materials, certain language proficiency differences might be expected between High Users and Low Users.

Cloze testing has been investigated with students for whom English is a second language, as well as with native English speakers. (Oller, 1971; Klare et al, 1972; Bormuth, 1968) The Eskimo children in this study are of both kinds of language background. In half of the schools in each group, High Users and Low Users, teachers perceive the student population to be Eskimo-dominant in language. In the other half, teachers perceive the students to be English-dominant in language. This provides an opportunity to study possible language proficiency effects of High Use of the library collection, particularly among Eskimo-dominant children.

One difference that seems to distinguish second language learners from native speakers of English is that native speakers are able to fill in cloze test blanks requiring function words with relatively more accuracy than those requiring content words. For second language learners, the reverse is true. (Klare and Sinaiko, 1972, 1973) Hatch (1974) found a similar effect among native and nonnative speakers of English on a proofreading task. Function words are articles, conjunctions, prepositions, and similar words which are important as connectives, but which have no readily discernable meanings of their own. Content words, on the other hand, are generally nouns, verbs, adjectives, and adverbs. Content words contrast with function words in having identifiable meanings out of sentence context.

It was decided to look at relative numbers of content word errors and function word errors among four groups of children in this study: High Use English-dominant, High Use Eskimo-dominant, Low Use English-dominant and Low Use Eskimo-dominant. It would seem that, being English-dominant, both High and Low Use English-dominant youngsters would tend to exhibit errors more typical of native speakers of English. Among High and Low Use Eskimo-dominant children, however, differences in language proficiency might be discerned, reflecting the difference in amount of exposure to English, on the basis of amount of Library Use. Of course, Library Use also involves media other than books, for example, video tapes, records, and filmstrips.

Important features of second language acquisition are exposure to that language, opportunity to listen to it, to read in it, and to have to function in it generally. It could be the case that the Library/Media Center plays a valuable role in English language proficiency of the Eskimo children by making a variety of English language materials readily available.

Research hypotheses. Eskimo-dominant children in High Use schools will exhibit proportionately more native-speaker-of-English type errors than will Eskimo-dominant children in Low Use schools. English-dominant children in High and Low Use schools will exhibit native-speaker-of-English type errors to a similar degree.

Subjects, materials, and methods. A random sample of 24 cloze test passages for each of the following groups was derived using a table of random numbers: Eskimo-dominant High Users, Eskimo-dominant Low Users, English-dominant High Users, and English-dominant Low Users, for each grade from three through six. For grade two, a random sample of 12 passages for each of the four groups was derived in the same manner. (Grade two had only two passages per cloze test booklet while grades three through six had four passages in each cloze test.)

All blanks in each test passage were categorized on the basis of whether they required content words or function words in order to be filled in correctly. A function-to-content-word ratio was calculated for the blanks of each passage administered, and its corresponding decimal determined. Each completed passage in the random sample was then scored for total number of errors. Next, each error was categorized as a content-blank error or a function-blank error. An error-type ratio, and corresponding decimal, was then calculated for each passage. The student passage error ratio was compared to the function-content word ratio of the test passage. Depending on which side of the ratio the student error ratio fell, the student's passage was assigned to either the "Native English" error category or to the "Nonnative English" error category. A total of 432 passages was analyzed in this fashion.

Null hypotheses. There will be no significant differences in the number of Native English error passages and Nonnative English error passages among High Use and Low Use Eskimo-dominant, and High and Low Use English-dominant students.

Statistical treatment. A two by two Chi Square design was employed (error type by Library Use by language dominance by grade level).

Results. As Table XIII indicates, passages completed by Low Use Eskimo-dominant students stand out as predominantly like those of nonnative speakers of English, as reflected by the types of errors made. In contrast, the other three groups (including High Use Eskimo-dominant) are more like native speakers of English, as reflected by the kinds of errors they make.

Statistically significant differences are exhibited between High and Low Use Eskimo-dominant groups at every grade level. In contrast, no differences at the desired level of significance ($p > .05$) are found between High and Low Use English-dominant groups.

insert TABLE XIII here

Discussion. Eskimo-dominant children who are High Users of the Library/Media Center's resources evidently benefit in English language proficiency from the combination of events which includes Library Use in their schools. Low User Eskimo-dominant children do not appear to benefit to the same degree in the development of English language proficiency.

In this respect, the Library/Media Center appears to play a role not only in providing a wide variety of information generally, but also in providing implicit information about the English language for an important part of the Alaskan population in this study.

The following subsection investigates the language proficiency phenomenon in a slightly different, and more detailed, way.

B. Semantic and Syntactic Appropriateness of Errors Made by High Users and Low Users

Introductory discussion. In exploring language proficiency among the Alaskan students, the matter of word forms (content versus function) was the subject of the previous section. However, a finer measure of the appropriateness of the students' errors was also thought to be potentially useful. Since scores were relatively low overall on the exact word scoring basis, it was decided to investigate student errors more thoroughly.

The main idea in this analysis is to find out if High Users make "better mistakes" than do Low Users in filling in words in the

TABLE XIII

High and Low Users' Language Dominance and Cloze Error Type, Grades Two through Six

Language Dominance:	Eskimo			English			
Library Use:	Low	High		Low	High		Grade
Error Type:							
Native English	*1	10	($p < .01$)	7	8	($p > .05$)	Two
Nonnative English	11	2		5	4		
Native English	7	15	($p < .05$)	18	22	($p > .05$)	Three
Nonnative English	17	9		6	2		
Native English	7	16	($p < .02$)	16	18	($p > .05$)	Four
Nonnative English	17	8		8	6		
Native English	12	20	($p < .03$)	21	21	($p > .05$)	Five
Nonnative English	12	4		3	3		
Native English	10	19	($p < .02$)	20	19	($p > .05$)	Six
Nonnative English	14	5		4	5		

*The figures refer to frequencies, or number of passages categorized on the basis of error type into each division.

cloze tests. "Better" was defined in two ways. First, there are errors in meaning which can be judged as appropriate or not appropriate to the sentence and story context. Next, there are errors of word class which can be judged independently as correct or not for the place in the sentence in which they are used (e.g., a verb filled in where a verb is required, regardless of appropriateness of the meaning of the particular verb).

This part of the study is related to the view of comprehension as apprehending linguistic information and relating it to a wider context, that of the passage and not just the immediate sentence in which a word is filled in. (cf, Carroll, 1972) The children of this study may not have performed as well as one would like to expect on their cloze comprehension tests. Nevertheless, they may have made errors which would suggest better understanding of the story material than their raw scores seem to show.

Again, because of greater exposure to materials from the Library/Media Center, it would seem that High Users would likely have the background in both language structure and meaning to make more appropriate errors on their tests than would Low Users.

It also seems that a trend might be evidenced with older children making more "good" errors than younger children. Older children have had more time in which to benefit from use of the Library/Media Center resources, as well as from aspects of their development and school environment. A trend of this kind, if found, should be in evidence for both groups, High and Low Users, insofar as both groups' time for experience is similar. Quality of the experience, however, should show differences in the ultimate achievement at the sixth grade level.

Research hypotheses. High Users at all grade levels will demonstrate a greater percentage of both syntactically and semantically appropriate errors on their cloze tests than will Low Users. Both High and Low Users will exhibit a trend toward making an increasing percentage of syntactically and semantically appropriate errors as the grade level increases.

Subjects, materials, and methods. A random sample of High and Low Users' cloze passages was selected using a table of random numbers. A total of 308 passages was used from cloze tests of each group, High Users and Low Users. The following number of passages was taken for each group at each grade level: grade two, 32; grade three, 72; grade four, 80; grade five, 60, and grade six, 64. This provided a one-third or greater sample for each grade level.

The overall total of 616 passages was then analyzed in two ways. First, the erroneously filled-in words were evaluated for syntactic appropriateness in the sentences in which they occurred. Next, the error words were judged for appropriateness of meaning in the story context.

For example, a substituted for the correct word the reflects a syntactically appropriate error, an article in an appropriate place. In many cases, of course, it is appropriate to use a number of different parts of speech, as before a noun, for example. Sentence structural context was important in this evaluation. For instance, big substituted for the in a sentence like "The boy looked for the cat" would not be judged syntactically appropriate because native speakers of English typically do not precede a singular noun with an adjective without also using an article in a sentence of this type. In the semantic analysis, though, the substitution of big would be considered appropriate in meaning, insofar as a big boy was not contradictory or anomalous on the basis of other story material. Such a fill-in, acceptable both in terms of phrase meaning and story content would be judged semantically appropriate, but syntactically inappropriate.

A typical substitution that was judged as appropriate both in syntax and in semantics was brown for "the girl with the long ______ hair" where stringy was the actual correct choice. An example of a fill-in which was judged appropriate in word class, but not appropriate in meaning, was chairs filled in for visits in the sentence "He looked forward to these ______ by little Charlie. Both the error word and the correct fill-in are nouns, so visits as a noun can be judged appropriate.* The meaning of chairs, however, is not appropriate in the story context. (Had the story been about Charlie making chairs, the error word could have been judged appropriate in meaning.)

Two scores were derived for every passage evaluated, one for syntactic appropriateness and one for semantic appropriateness. The scores were calculated for each passage as the percentage of the total errors in the passage which were appropriate in one way or the other. The concurrence of three judges (native speakers of English) as to appropriateness was the criterion for including an error in this percentage.

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*Finer distinctions could have been made as, for example, visits could be judged as a more abstract noun than chairs. It was decided for economy's sake not to make such distinctions in features of parts of speech.

Null hypotheses. There will be no significant differences between High and Low Users' percentages of semantically appropriate errors in grades two, three, four, five, or six. There will be no significant differences between High and Low Users' percentages of syntactically appropriate errors in grades two, three, four, five or six.

Statistical treatment. To test the null hypotheses, two two-factor analyses of variance were used. In the first analysis, the percentage of errors appropriate in meaning was used with the factors grade (two through six) and Library Use (high or low). In the second analysis, the percentage of errors appropriate in terms of sentence structure was used with the same factors. Fisher's LSD procedure was used as the post hoc test for both analyses.

Results. The High Library Users' overall performance in making "good" mistakes in word meaning and word class on their cloze tests is superior to the Low Users' performance. Both grade level and Library Use are significant as independent main effects. ($p < .01$)

At each grade level, in both syntax and semantics, the differences between High and Low Users' mean scores are also statistically significant, on the basis of Fisher's LSD post hoc test.

Table XIV shows the percentage of errors considered appropriate in students' choices of word classes (e.g., nouns, verbs) out of all errors counted on the cloze tests. Table XV shows the percentage of errors considered acceptable in meaning.

insert TABLE XIV here

insert TABLE XV here

Several other features are evident. First, for both High and Low Library Users there is an indication of slightly more "good" mistakes made in word class than in word meaning. By grade six nearly half the High Users' mistakes in word class are errors acceptable in the sentence structure. About one-third of the Low Users' errors in word class are acceptable by sixth grade. The percentages are slightly smaller for both groups in making mistakes that preserve appropriate meaning in the story context. Tables XVI and XVII show the percentages of "good" errors for both groups at each grade level, in syntax and semantics.

insert TABLE XVI here

TABLE XIV

High and Low Users' Percent of Syntactically Appropriate Errors

Grade:	Two	Three	Four	Five	Six	
Library Use:						
High	21%	22	29	38	46	
Low	12	16	15	26	33	
n of passages	64	144	160	120	128	Total: 616
	p .05	p .05	p .01	p .01	p .01	F: 100.14 p < .01

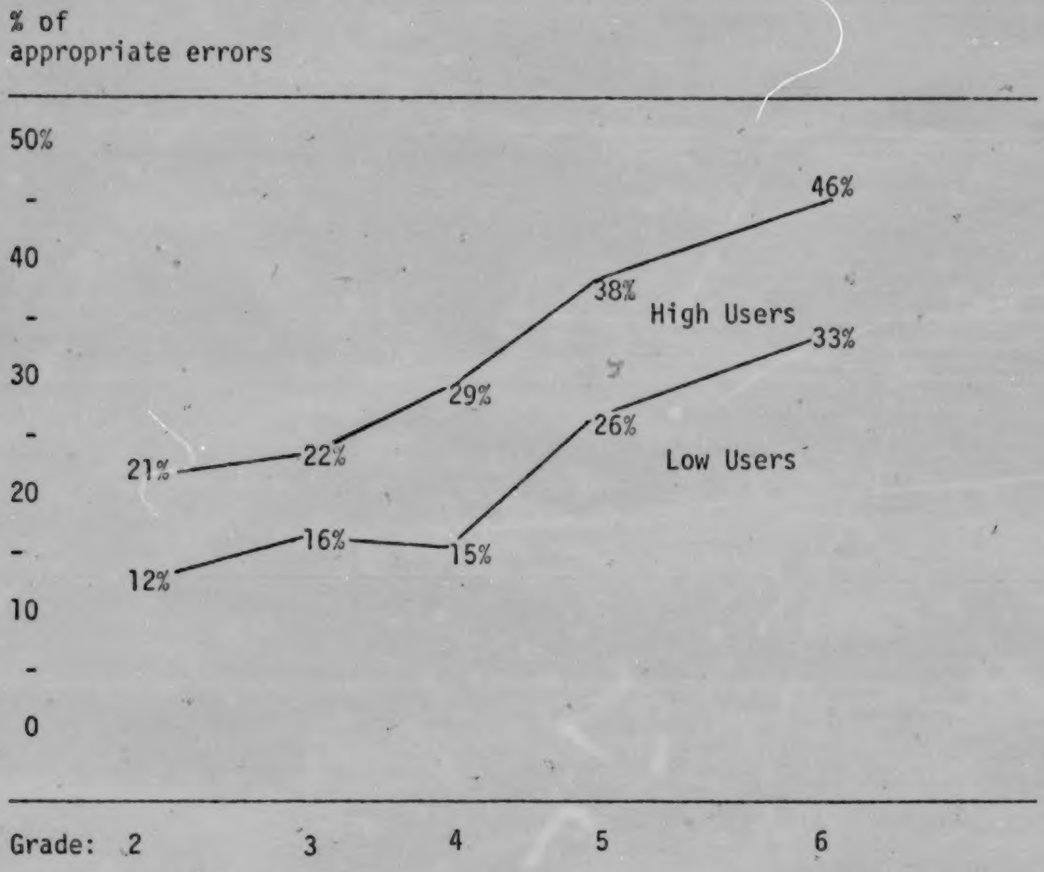
TABLE XV

High and Low Users' Percent of Semantically Appropriate Errors

Grade:	Two	Three	Four	Five	Six	
Library Use:						
High	19%	15	21	28	40	
Low	5	9	10	21	29	
n of passages	64	144	160	120	128	Total: 616
	p .01	p .01	p .01	p .01	p < .01	F: 96.86 p < .01

TABLE XVI

Percent of Syntactically Appropriate Errors of High Users and Low Users



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insert TABLE XVII here

Next, in both areas, word class and meaning, both High and Low Users exhibit a trend in improvement from second grade to sixth grade. Some differences in the pattern of this improvement are evident, though, for the two groups. Tables XVIII and XIX present each group's data separately to illustrate the difference in their patterns.

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insert TABLE XVIII here

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insert TABLE XIX here

Among High Users, a reversal and a minimal gain are evident at the third grade level, the reversal in word meaning and the gain in word class. Among Low Users, a similar weakness in the trends for both syntax and semantics occurs at grade four. For both High and Low Library Users, fairly consistent improvement continues through to sixth grade, just after these weak points.

A more obvious feature (Tables XVI and XVII) is that High Use students in the second grade start out well in advance of Low Use second graders, then maintain the lead throughout the grades. Both High and Low Users show about the same amount of gain from second to sixth grade. Among High Users, in semantic appropriateness, this gain is 21 percent. For Low Users the gain in making "good" mistakes

TABLE XVII

Percent of Semantically Appropriate Errors of High Users and Low Users

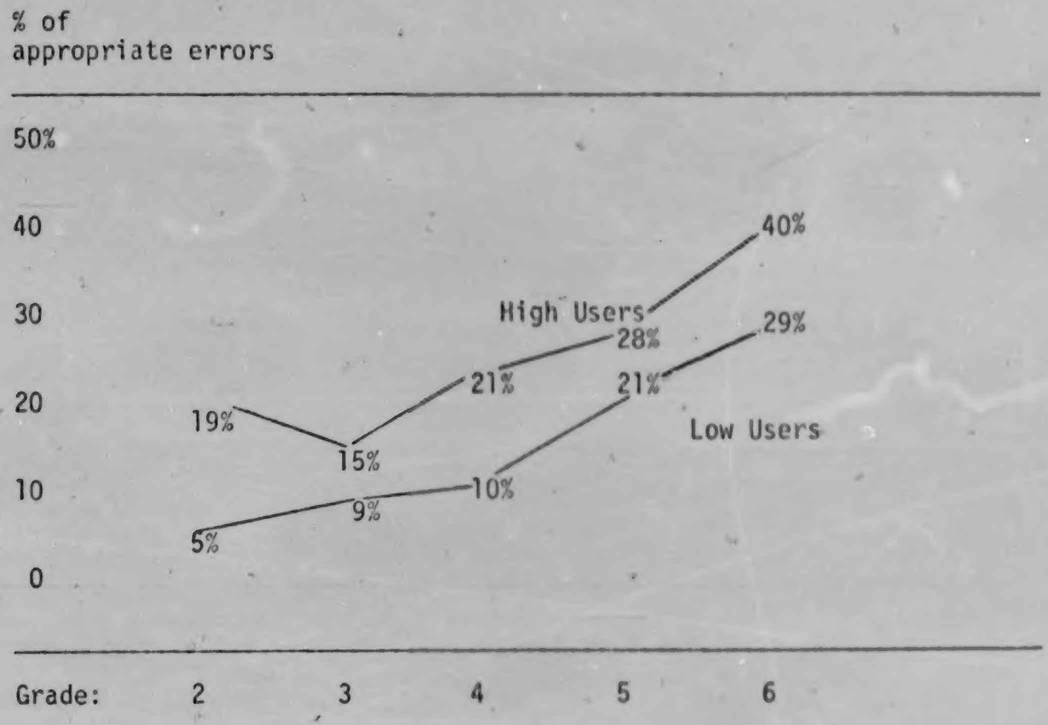


TABLE XVIII

Percent of Syntactically and Semantically Appropriate Errors among High Users

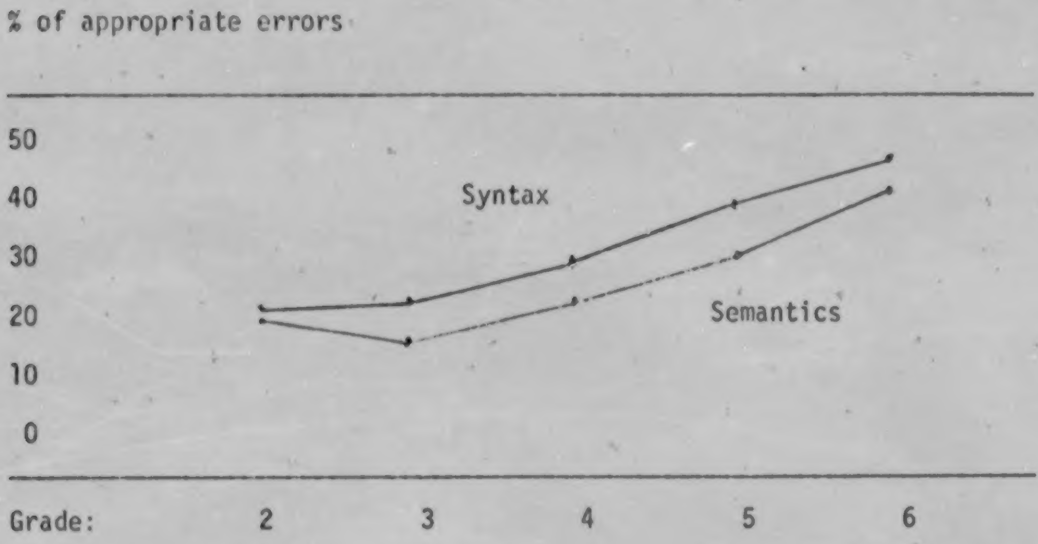
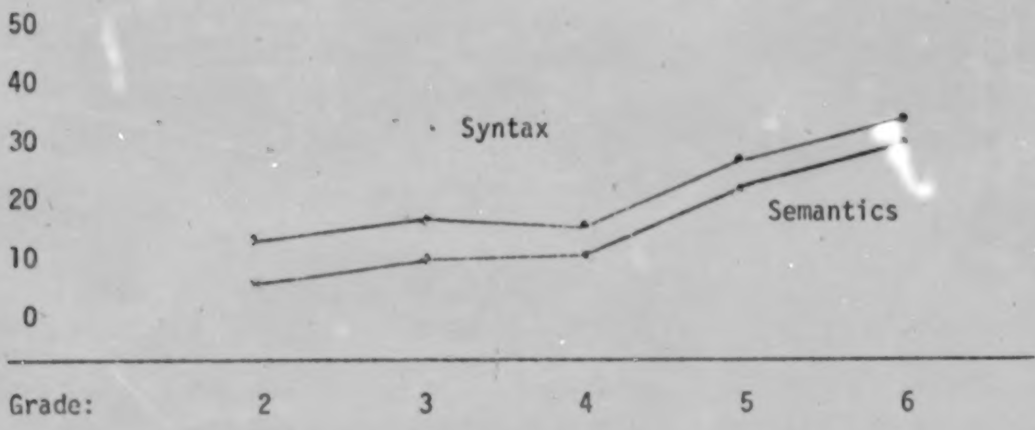


TABLE XIX

Percent of Syntactically and Semantically Appropriate Errors among Low Users



in word meaning is 24 percent. In filling in syntactically acceptable error words, High Users gain 25 percent from second to sixth grade, while Low Users gain 21 percent. It should be pointed out that the present sixth graders (1975) were in the primary grades when the Regional Library program was initiated, thus have had the opportunity to use library resources since their early school years.

Discussion. Three main points are evident in the results of the analysis. These points will form the focus for this discussion.

First, the High Users exhibit higher performance than the Low Users in making "good" mistakes in both word class and word meaning at each grade level. Second, in both syntax and semantics, High Users exhibit a trend which is slightly different from the pattern of improvement of the Low Users. Finally, both groups appear to make slightly "better" mistakes in word class than in word meaning appropriate to the sentence and the story.

It was anticipated that High Users would generally make "better" mistakes than the Low Users at every grade level. This prediction is supported by other findings already discussed, for example:

i) High Users' comprehension scores are higher at each grade level than Low Users' comprehension scores,

ii) High Users' scores are higher than Low Users' scores regardless of whether the story content is Alaskan or non-Alaskan,

iii) High User Eskimo-dominant language speakers make significantly more native-speaker-of-English type errors than do Low User Eskimo-dominant speakers, and

iv) High Users leave far fewer blanks empty on their cloze tests than do Low Users, giving them the opportunity to get many more attempted word fill-ins correct.

This prediction is borne out to a statistically significant degree, as the findings in Tables XIV and XV indicate.

Both High and Low Users show either minimal gain or a reversal at some point in the pattern up through the grade levels. For High Users, this occurs from second to third grade. For Low Users, it occurs from third to fourth grade. The difference in patterns of performance between the High and Low Users is not well-substantiated by any previous findings in this report. For example, mean comprehension scores on the cloze tests do not follow the same leveling off, or reversal, between second and third grades among High Users. Rather, for both High and Low Users, the mean comprehension scores dip at the fourth grade level.

To explain the difference in patterns of appropriate mistake-making, it is necessary to anticipate some results which are discussed in more detail in Chapter V. These results will be mentioned only briefly here, insofar as they appear to shed light on the findings in this section.

Information volunteered by teachers in the 12 test schools on the Teacher Background Questionnaire indicates that:

i) second grade teachers in High Use schools spend about twice as much time on the combined activities of formal reading instruction and reading aloud to the children as do teachers in Low Use schools (an average of 71 minutes daily compared to 32 minutes daily);

ii) of this time, High Use teachers average 20 minutes daily reading stories aloud to their students, compared to an average of no time for Low Use teachers at the second grade level, and

iii) for grades two and three, when time devoted to independent reading and language-related activity (television, movies, filmstrips, records) are combined, Low Use teachers average more time than High Use teachers (about 42 minutes daily).

TABLE XX

Average Actual Time for (A) Reading Instruction and Reading Aloud, and (B) Independent Reading and Language-related Activity

Grade:		2	3	4	5	6
		Minutes Daily				
Reading Instruction and Reading Aloud	High Users:	71	61	59	55	59
	Low Users:	32	32	54	62	62
Independent Reading and Language-Related Activity	High Users:	29	30	19	19	19
	Low Users:	42	43	27	28	22

Thus, the amount of time given to reading instruction and the time given to reading aloud to the students in High Use schools seems to parallel the High Use second graders' performance in making "better" mistakes over the Low Users' performance.

Furthermore, from second to third grade, reading instruction time and reading aloud time remains the same, on the average, among teachers in Low Use schools. This time decreases slightly (by an average of 10 minutes daily) from second to third grade among High Use teachers. This may help explain the minimal gain and reversal apparent in the third grade High Users' pattern of "good errors" on their cloze tests. It should be noted that while third graders' syntax (language structure) does not seem to suffer from this decrease, their facility with word meaning does decrease slightly.

For Low Users, the drop or minimal gain in appropriate mistakes of word class and of word meaning comes from third to fourth grade. (See Table XIX) However, the Teacher Background Questionnaire reveals that there is a marked increase in combined reading instruction time and reading aloud time from third to fourth grade (from 43 percent of all time devoted to language activity to 67 percent of all time devoted to language activity). This increase comes partially from reading instruction time (38 minutes daily average in fourth grade) and in greater part from reading aloud time (an average of 16 minutes daily compared to 0 in second and third grades). Several observations emerge from these facts.

First, in the primary grades, the combination of reading instruction and reading aloud time seems to work to the distinct advantage of the High User children. Given a slight drop in the time for these activities in third grade, the children's ability to make appropriate errors also seems to decline.

Among Low Users, by the time the children reach fourth grade they have spent, on the average, a good deal more time than the

High Users in language activities that generally can be classed as non-teacher-guided (e.g., independent reading, television, movies, and records). This has happened in conjunction with far less teacher-guided language activity such as formal reading instruction and listening to stories read aloud by the teachers than is evident among High Use teachers. Thus, it is possible that much of the fourth grade reading instruction is given over to remedial or "catch-up" work, which is not yet sufficient to help Low Users make much better mistakes than their third grade counterparts. Rather, for Low Users, the "better" mistakes come at the fifth and sixth grade level, along with maintained time for listening to stories read aloud by the teachers and an increase in time devoted to reading instruction. It is notable that the Low Users' gains in fifth and sixth grade "good" mistakes also parallel a drop in the amount of time their teachers provide for independent reading and other language-related activities such as television, movies, and filmstrips.

Table XXI presents the percentage of all time devoted to language activity, which High Use and Low Use teachers devote to reading instruction and reading stories aloud combined. "All time devoted to language activity" is the sum of average actual time at each grade level separately devoted to (i) reading instruction, (ii) reading aloud to students, (iii) independent reading, and (iv) language-related activities such as television, movies, filmstrips, and records. For example, High Use second grade teachers average a total of 100 minutes daily for all four categories of language activity (71 plus 29). Thus, 71 percent of this time reflects time for reading instruction and reading aloud to the children, and 29 percent of this time reflects time given to independent reading and other language-related activity.

Table XXII presents the percentage of all time devoted to language activity which High and Low Use teachers give to independent reading and the other language-related activities.

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insert TABLES XXI and XXII here

Tables XXI and XXII should be compared with Tables XVI and XVII. The patterns are remarkably similar.

The marked early advantage of the High User students over the Low User students corresponds to the much greater amount of time High User second and third grade teachers give to guided (vs. less-guided) reading activity, specifically reading instruction and reading aloud to the children.

A slight decrease in time given to these guided reading activities in third grade corresponds to (i) only a slight increase in the appropriateness of word class mistakes, and (ii) a decrease in acceptable word meaning mistakes among High Users. Along with this feature, another one may be important. In a number of smaller schools first, second, and third graders form one classroom, while fourth through sixth graders comprise another. Third grade children, in these instances, may be listening to the same stories the teacher reads aloud to the younger students.

Furthermore, the kinds of reading instruction activities

TABLE XXI

Average Combined Reading Instruction and Reading Aloud Time for High and Low Users

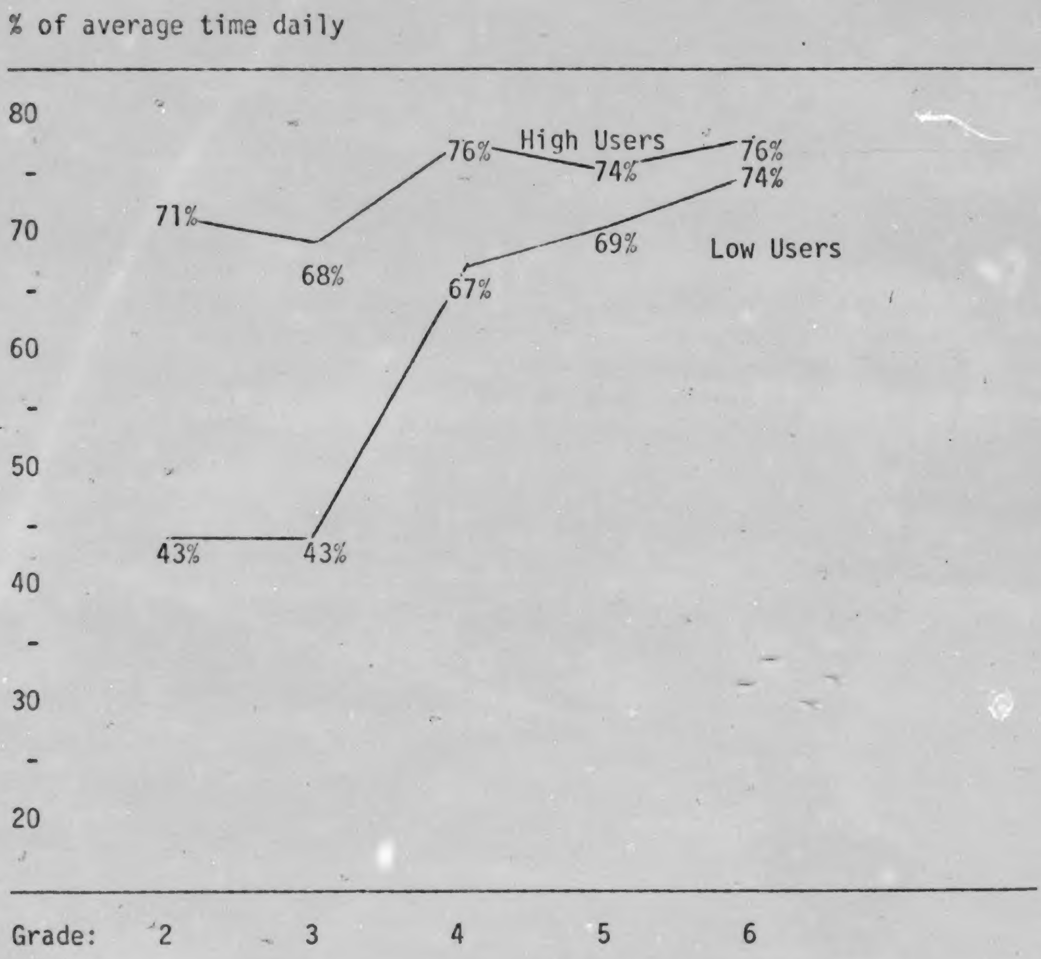
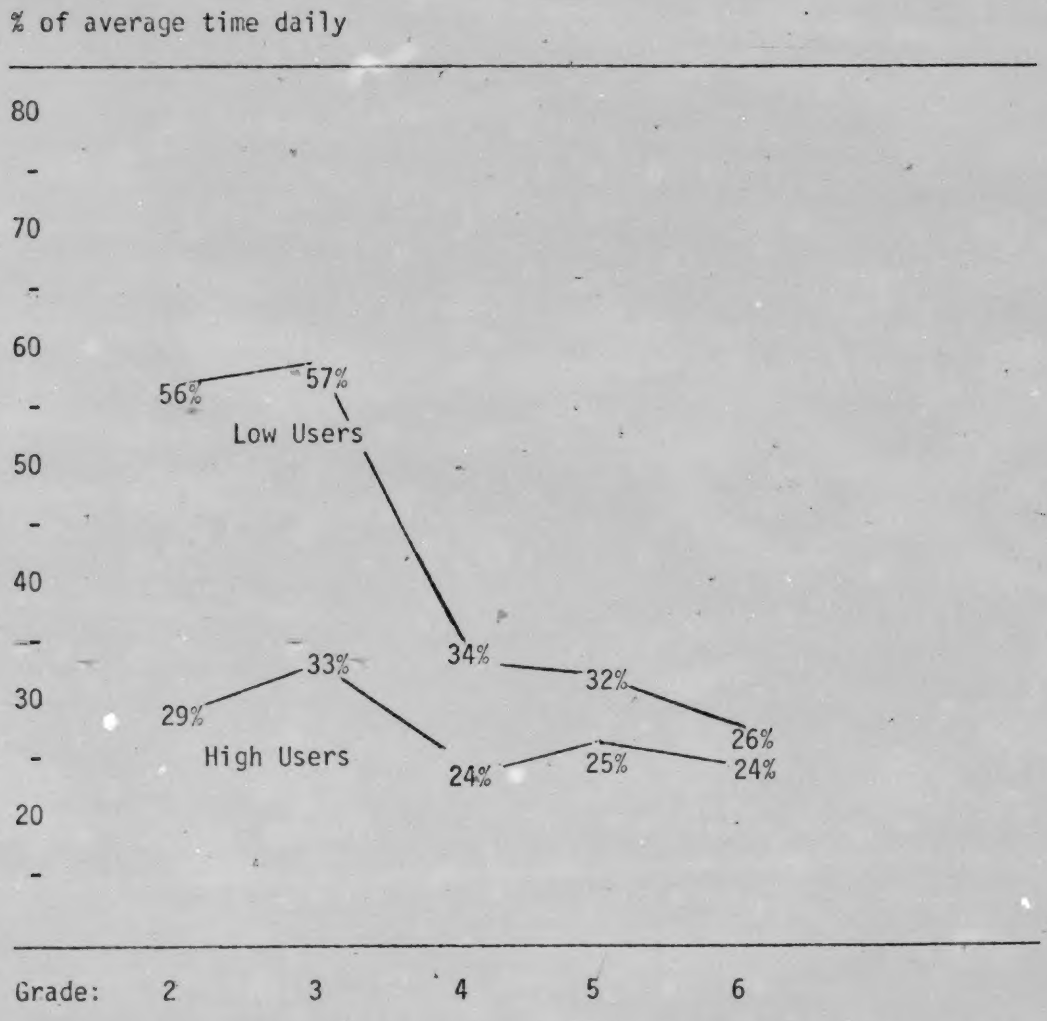


TABLE XXII

Average Combined Independent Reading and Language-related Activity Time for High and Low Users



provided for these third graders may be quite similar to those activities provided for the second graders, although some efforts to differentiate were evident in some classrooms (i.e., different vocabulary items, a different level of reading text). Nevertheless, a focus on the thinking (interpretive) skills that go with story comprehension may be subverted by the so-called mechanics of reading (e.g., inflectional affixes, "sound-symbol correspondences"). The generally-shared concern of primary teachers throughout the villages was about the youngsters' difficulty with "sound-symbol correspondences." This concern would suggest an emphasis throughout primary classrooms on such "mechanics" for first, second, and third graders alike. (This emphasis may also constitute much of the less able fourth graders' reading instruction).

The noticeable improvement in Low Users' "good" mistakes among fifth and sixth graders corresponds with several features of how teachers divide their time for reading and language activity. First, the jump in the amount of time given in fourth grade to the teacher-guided reading and language activities (reading instruction and reading aloud to the children) corresponds with the marked decrease beginning in grade three of time given to independent reading and such activities as television, movies, and filmstrips. With this decline in the more independent activities and the incline in reading instruction and teachers' reading aloud, there is a corresponding improvement in the appropriateness of the errors the children make on their cloze tests.

A possible reason for this improvement occurring in fifth grade rather than in fourth grade was noted before. In brief, it is that fourth grade time may well be given to reading skills students did not achieve earlier. It is also probable that along with the catching up, fourth graders who have not been particularly capable readers in the previous two or three years of school (as their comprehension scores suggest) may have to be "won back" to the notion that they can learn to read proficiently.

If the number of blanks left empty on a cloze test can be taken as an indication of confidence, or willingness to try in spite of possible mistakes, then this last notion has some support. The average number of blanks left empty by Low User fourth graders is higher than the average number left empty by either third or fifth grade Low Users, as Table XXIII shows.

High Users in the same grades have quite a different pattern of blanks left empty, the same for both third and fourth grade and lower among fifth graders.

TABLE XXIII

Average Number of Blanks Left Empty by
Third, Fourth and Fifth Graders

Grade	Low Users	High Users
3	47	36
4	57	36
5	38	8

A final point from the results of this "mistake" analysis is that both High and Low Users perform somewhat more appropriately in their errors of word class than in their errors of word meaning. Meaning, it will be recalled, was evaluated on the basis of non-contradictory or non-anomalous word substitutions in terms of story content, not just sentence content. Errors in word class, however, were judged only on the basis of the immediate structure. This makes a difference in how far the reader has to go, both forward and backward, in the cloze passage in order to make appropriate meaning errors compared to the shorter constraint on appropriate word class fill-ins. One feature pointed out about cloze tests is that filling in the blanks may depend heavily on "short-range constraints." That is, the reader may rely almost entirely on the four or five words on either side of the blank space for information to help him fill in the blank. (Klare, et al, 1972) This suggested feature of cloze tests would readily explain why the Alaskan students make "better" mistakes in syntax, where appropriateness of the word class depends only on the immediate sentence. The fact that the advantage of syntax over semantics is very slight in this analysis also suggests that possible "short-range constraints" are not exceedingly constraining, at least for this population.

C. Frequency Ranks of Error Words among High Users, Low Users, English-dominant and Eskimo-dominant Students

Introductory discussion. In the study of the Alaskan students' cloze test errors, one possibility that arises is that High Library

Users might choose more sophisticated words than Low Library Users. That is, High Users, by virtue of exposure to more library materials than Low Users, might fill in words which are less common in general usage than words filled in by Low Users.

It has long been known that people do not use different words with equal frequency. Rather, they use some words to make up a relatively high proportion of their speech and writing, and other words much less often. (Thorndike, 1933) Words like *the*, *of*, *girl*, and *boy* are used much more frequently, for instance, than words like *bucolic* and *hyperbole*.

It was found in one study of 80,000 total words used in 500 telephone conversations that 100 most frequently used words in English made up 75 percent of the total number of words used. (French et al, in Klare, 1968) In writing, too, people have been found to display the same tendency to use a few highly frequent words to make up a substantial proportion of the total number of words used. (Mann, in Klare, 1968)

Word frequency has been a major factor in the content of many developmental reading series, as well as other literature, as an important feature of the readability of the material. This use of most-frequently-used words for written material is supported by studies related to both reading ease and reading preference. (cf, Klare, 1968; Johnson et al, 1960; Kintsch, 1970).

With respect to reading comprehension, in a study of cloze test passages Coleman found that passage comprehension and frequency ranks of the content words (e.g., nouns, verbs) exhibit a high positive correlation. (Coleman, in Klare, 1968)

Generally, word frequency appears to be a major characteristic which pervades language use at many levels, from ease of reading and preference for some written material, to comprehension of material, to both written and spoken production of language. Word frequency, then, appears to be potentially useful in distinguishing High Library Users from Low Library Users.

Furthermore, in second language acquisition studies, little or no evidence has been forthcoming with respect to the frequency of vocabulary items acquired by second language learners. The present study includes both English-dominant and Eskimo-dominant students, as their teachers perceive student language use. Differences in frequency of vocabulary items may be evident among the two language groups.

Research hypotheses. High Library Users will exhibit a greater proportion of lower frequency words in their incorrect cloze test fill-ins than will Low Library Users. English-dominant speakers will exhibit a greater proportion of lower frequency words in their incorrect cloze test fill-ins than will Eskimo-dominant speakers.

Subjects, materials, and methods. A random sample of 108 passages was selected from the cloze tests of each of the following groups: High User English-dominant, High User Eskimo-dominant, Low User English-dominant, and Low User Eskimo-dominant. For each grade level from three through six, 24 passages were selected for each group, and for grade two, 12 passages were selected.

The incorrectly filled-in words for each group were recorded and tallied. Blanks left empty were not counted. The frequency-per-million rank from the American Heritage Word Frequency Book of over 80,000 different words (Carroll, et al, 1971) was then determined for each error word.

Error words were then grouped into nine categories on the basis of frequency rank categories. For example, for Low User Eskimo-dominant errors, 829 error words have frequency ranks from 100 to 500 most frequently-used words per million.

The frequency rank categories established are as follows: 100 to 500, 600 to 1,000, 1,100 to 1,500, 1,600 to 2,000, 2,100 to 3,000, 3,100 to 10,000, 10,100 to 20,000, 20,100 to 50,000, and 50,100 to 100,000. The percentages of each group's total number of error words were then calculated for each category.

A total of 6,152 words was classified in this way for the four groups. Distinct types were not determined. That is, a word like small was counted each time it occurred as an error word, rather than only one time for a group.

Results. As Table XXIV shows, there are virtually no notable differences among the four groups. For all four groups, the vast majority of error words selected are in the 100 to 500 most-frequently-used words in the English language, on the basis of Carroll et al's (1971) computer analysis of more than 80,000 words. Thus, for both High and Low Library Users, and both English- and Eskimo-dominant students, the pattern of word use appears to be much like that of

English speakers in general.

insert TABLE XXIV here

Since blanks left empty were not counted in this analysis the relatively smaller number of actual error words among the Low User Eskimo-dominant students is explained. While they made more errors, as Low Users, they also left more blanks, as discussed previously.

The general trend among the four groups is to use words highest in frequency for the most part, then less frequent words in decreasing proportion. Words which are from the 100 most frequent to the 1,500 most frequent account for 86 to 90 percent of all error words used. There is one obvious exception to the overall pattern, in the 3,100 to 10,000 word frequency category.

Discussion. Evidently, in spite of differences in language proficiency, as discussed previously in this report, the frequency content of the Alaskan students' written work is remarkably similar across language-dominance and Library Use categories.

This finding is not so surprising, considering the body of written materials upon which the Carroll et al word frequency ranks are based. The authors used a computer-assembled selection of words drawn from more than 1,000 published materials. These materials included textbooks, workbooks, kits, novels, poetry, nonfiction, magazines, and encyclopedias. The effort was to sample as representative a range as possible of the required and recommended reading

TABLE XXIV

Word Frequency of Error Words Among English- and Eskimo-dominant High Library Users and Low Library Users

Library Use:	High				Low			
Language Dominance:	Eskimo		English		Eskimo		English	
Words:	n	%	n	%	n	%	n	%
Frequency per million								
100-500	829	76%	1225	71%	1147	69%	1199	72%
600-1,000	110	10	212	12	208	12	182	11
1,100-1,500	48	4	75	4	77	5	66	4
1,600-2,000	25	2	46	3	55	3	58	3.5
2,100-3,000	15	1	54	3	42	3	44	3
3,100-10,000	58	5	91	5	95	6	82	5
10,000-20,000	7	1	16	1	23	1	20	1
20,100-50,000	6	1	6	1	23	1	7	0.5
50,100-100,000	0	0	0	0	1	0	0	0
Total:	1,098	100	1,725	100	1,671	100	1,658	100

"to which students are exposed in school grades 3 through 9 in the United States." (Carroll, et al, 1971, p. xiii) Thus, it is probably the case that the range of materials available to Alaskan students in their classroom programs is represented quite thoroughly in the analysis of word frequencies against which student error words were matched for this study.

Apparently, too, second-language learners of English in this study are like their English-dominant counterparts in their proclivity for using words which occur with greatest frequency in that language.

The exception to the general pattern of the Alaskan students' error words' frequency is a matter of curiosity. Why should there be a sudden increase in the percentage of words whose frequency ranks are from 3,100 to 10,000, after steady decreases from the higher frequency categories?

To solve this puzzle, a search was made through the actual words which were incorrectly filled in on the cloze tests and which fall between 3,100 and 10,000 in frequency rank. The results are revealing. A sample of these words follows:

ancestors
angrily
barrel
battered
bath
beak
belly
berries
birch
blankets
board
boards
brightly
bug (noun)

bugs (noun)
bucket
button
cleaned
colder
crawl
cub
cubs
curled
cute
December
drift (noun)
Eskimo
Eskimos

feeding
fixing
foxes
furs
furry
God
grizzly
hairy
hatch (verb)
hooked
icy
ivory
knot
listens
moose
moss
net
paws
picking
polar
puppy
rattle
reindeer
scare
scratch
seal (noun)
shines
shiny
sleds
spear
strongest
sunny
sunshine
tale
tame
tusks
twigs
watches (verb)
windy

One could nearly write an Alaskan adventure story from these words, including, as the list does, many words referring to the weather, animals of cold regions, and life lived close to the out-of-doors. Of 142 different error words (types) used by the students in this frequency category, the list above represents nearly half (47.2 percent). The several Alaskan content stories used for the cloze tests doubtless suggested a number of these words to the students. Several of the words were suggested explicitly (as barrel and battered referring to an old rifle) in the stories, and students repeated them in blanks.

In general, then, words which might be labeled as specific to the Alaskan environment appear to account for the increase in use of words in a lower frequency category. This is assuredly the case for mukluks and igloo which were error words filled in by several students. Igloo was explicitly suggested in one Alaskan story, although mukluks was not. The frequency ranks for these words are 25,200 (igloo) and 17,300 (mukluks).

This finding might suggest that English word frequencies are slightly different among such populations as the Alaskan Eskimos. Perhaps more remarkable is the finding that the four Alaskan student groups are so similar to other English speakers in using high frequency words much more often than low frequency words, in spite of quite different environmental/contextual backgrounds from English speakers in general.

Word frequency evidently is not useful for distinguishing between High Library Users and Low Library Users, nor even among the groups with different dominant languages. Rather, exploring the word frequency characteristic of error words has proven interesting in another way. It is a matter deserving further study for writers of library materials for this population, as well as for teachers.

Summary and conclusions

In three different measures of English language proficiency, the High Library Users have significantly higher scores than the Low Users, at every grade level from two through six.

First, Eskimo-language-dominant students who are High Users exhibit content word and function word errors in a way very much like the English-dominant students of both High and Low Use groups. This demonstration of errors which are like the errors generally made by native speakers (rather than nonnative speakers) of English contrasts with the kinds of errors made by Eskimo-dominant children who are in the Low Library Use group. Greater exposure to the English language, through the variety of resources available from the Regional Library/Media Center and through more time spent in guided reading activity, is held in large part responsible for this difference between High Use and Low Use Eskimo-dominant students.

Next, in making "good" mistakes in filling in error words which are appropriate to the sentence structure surrounding the cloze test blank, High Library Users have significantly higher scores than Low Library Users. This superiority in "good" mistakes also holds for the High Users in error words which are appropriate in meaning to the cloze test stories.

The amount of time teachers of High Use students give to a combination of teacher-guided reading and language activities is suggested as a notable contributor to this advantage of High Library Users over Low Library Users. The activities in which High Users are superior in terms of average time spent daily are reading instruction and listening to the teachers reading stories aloud. Evidently, teachers who value reading instruction time for their students also value the Library/Media Center as a regular source of stories to read aloud to students. The benefit to the students of this combination of events is evidenced in the appropriateness of the mistakes they make on their cloze tests.

Teachers of Low Use students, on the other hand, apparently average far less time than teachers of High Use students in reading instruction and reading aloud to the children, particularly in the primary grades. Rather, teachers of Low Use students exceed teachers of High Use students in activities which may be considered less teacher-guided, such as independent reading and movies, television, filmstrips and records, especially in the primary grades. The combination of more independent activity and less reading instruction and reading aloud to children appears to work against the students with respect to the kinds of errors they make, both in language structure and in meaning.

These findings should not be taken as an indictment of media resources other than books. As was pointed out earlier, the knowledge of the world the Alaskan children can gain through video tapes, movies, and filmstrips should only be beneficial to the store of meanings they can bring to the task of reading. It appears that these media should be used (i) perhaps with more direct teacher guidance and explanation, and (ii) in combination with a greater amount of time given to instructional reading activity specifically. The time given to reading activity seems to be far more beneficial when it is teacher-guided than when it is independent reading. In fact, the anomaly among Low Library Use schools is that a substantial amount of independent reading time should be provided for primary children, when reading instruction and reading aloud time are slighted in comparison to that provided in High Use schools. The question is how the Low Use children can benefit from independent reading which their reading instruction evidently has not prepared them for, insofar as their cloze comprehension scores indicate that this is the case.

It is possible that media other than books are viewed as ways to take care of groups of children when teachers need time to work with a separate group, especially in schools where several grades are part of the same teacher's classroom. It is also possible that "independent reading" is a time in the primary grades when students look at picture books, visit with one another about the books, and generally enjoy the books, without actually reading them. In small amounts, and in combination with the teachers' reading aloud to the students, the activity of independent reading could be beneficial. The manner in which this time is currently used in Low Use schools does not indicate that it is beneficial for primary students.

In conclusion, the Library/Media Center appears to be a most valuable resource for (i) implicit English language information for nonnative speakers of English among the Alaskan students of this study, and (ii) explicit information about the world including and extending beyond the Alaskan environment. It is evidently a more valuable resource for teachers who spend more time in guided reading and language activity than for teachers who give more time to independent reading and language activity.

Finally, word frequency patterns were studied among four groups of students, English- and Eskimo-dominant students of both High and Low Library Use groups. Unlike the other findings in this section of the study, in which High User Eskimo-dominant children differ from Low User Eskimo-dominant children, in the realm of word frequency all the children exhibit very similar patterns. The words they choose to fill in the cloze test blanks are first and foremost the highest frequency words of English. In this characteristic, these children are exhibiting a pattern common to English speakers in general, according to word frequency studies. A slight deviation from this general pattern occurs in one lower word frequency category, which contains a number of words amenable to describing certain aspects of the Alaskan environment.

In general, the word frequency sensitivities of these children are much more similar to than different from speakers of English in general. This observation is important in terms of the Regional Library collection of books, the collection chosen on the basis of American Library Association guidelines for American English-speaking school children. As far as the word frequency patterns of their vocabularies, the Alaskan Eskimo children are evidently as appropriate an audience for this collection as American English-speaking children in general.

IV. Academic Achievement

A. Metropolitan Achievement Test Scores: 1971-72 and 1974-75

Introductory discussion. The first year of operation of the Regional Library/Media Center was the school year of 1971-72.

While other programs with the objective of improving learning outcomes have also been in operation during the time period from 1971-72 through 1974-75, probably none has been as thoroughly available to all grades of all 32 village schools in the Bethel Agency as the library/media program. For example, bilingual programs have been established in some, but not all, schools. Some schools, but not all, have kindergartens. Expertise in special education has been available to children who have been identified as needing it, on a periodic visit basis for the most part. There are several schools which have special education teachers on the staff.

It must also be recognized that while Library/Media Center resources have been equally available to all students in all grades throughout the area, not all students and teachers take advantage of these resources to the same degree, or in the same manner. Nevertheless, given four years of operation, the impact of the Library/Media Center should begin to reflect itself in students' achievement test performance, albeit along with other variables too numerous to discuss.

It was particularly hoped by Library/Media Center personnel that language subtest performance would show improvement over the four-year period. The reasoning behind this prediction is that the language subtest of the Metropolitan Achievement Test purports to measure reference skills, which may be a factor specifically influenced by Library Use. Improvement in reference skills is considered of particular interest for sixth grade students, who have had the longest opportunity to take advantage of the Library/Media Center resources. It was also hoped by Center personnel that improvement would be evident for reading scores at all grade levels, as a partial result of the richness of resources available.

This part of the investigation into the impact of the Library/Media Center is presented with several major limitations. The first concern is with reliability in test scoring. The Metropolitan Achievement Test is administered annually as a part of the Bethel Agency testing program. Agency policy determines the details of test administration and scoring. In 1971-72, classroom teachers administered the tests for their own classrooms, sending the results away to be machine-scored. In 1974-75, classroom teachers both administered and scored the tests for their own students. Thus, the difference in scoring is one of both who performed this task and of how many different scorers took part in the effort from one test occasion to the next.

Another major limitation affects interpretation of the results of this analysis. This limitation is one mentioned above, the number of variables other than the availability of the Library/Media Center which may have affected achievement test performance.

The general prediction is that improvement will be evident in the results of the 1974-75 Metropolitan Achievement Test when they are compared with the 1971-72 tests. As was discussed above, another prediction is that improvement will be particularly evident in the results of, first, the language subtest, and next, the reading subtest.

Research hypotheses. The 1974-75 Metropolitan Achievement Test results for students in second through sixth grade will show improvement in the language and reading substests, when results are compared with the 1971-72 Metropolitan Achievement Test results.

Subjects, materials, and methods. Scores of all students in grades two through six, in the 32 schools of the Bethel Agency are the data for this analysis. The results of the subtests for reading, language, and the total battery, were made available to the researchers by the Bethel Agency in the form of classroom mean scores on these measures.

The 1971-72 Metropolitan Achievement Test results were on record at the Juneau Area Office in the form of classroom mean scores, and this necessitated using scores in the same form from the 1974-75 school year. In the case of each subtest, information was missing for some grade levels in the 1971-72 records. This accounts for the *ns* of 58, 60, and 62, rather than 64, in the tabled information.

Teachers in the village schools administered and scored the tests for their own students in the spring of 1975. Results were collected at the Bethel Agency office, and prepared for the present analysis by staff members there.

Null hypotheses. There will be no significant differences between 1971-72 and 1974-75 Metropolitan Achievement Test classroom mean scores in any of the three categories analyzed: reading subtest, language subtest, and battery total, at any grade level from two through six.

Statistical treatment. Separate analyses of variance were employed for each grade level in each of the three categories, reading and language subtests, and battery total, for the classroom mean scores from the two test occasions. Tests administered in second and third grades included reading and battery total results, but not a language subtest of reference skills such as the tests administered in the fourth, fifth, and sixth grade. For this reason, the analyses are for two categories only for second and third grade, and for all three categories for fourth through sixth grade.

Results. The most consistent showing of improvement is in the language subtest, as the Library/Media Center personnel hoped. An average gain of 5.3 months, or about half a school year, is indicated for grades four, five, and six together. The greatest gain is in the sixth grade scores, at 7.0 months for the 1974-75 scores over the earlier scores. The gains are statistically significant for all three grades ($p < .01$).

In the reading subtest, an average gain of about 3.6 months is indicated for second through sixth grade. The highest gains are at the third and fifth grade level, at 5.0 and 6.0 months respectively. The gains reach statistical significance for second, third, and fifth grades ($p < .01$). Fourth and sixth grade scores also show improvement from 1971-72 to 1974-75, though these gains do not reach the desired level of significance ($p > .05$).

Gains are also evident in total battery means for all grades except fourth. These gains are statistically significant as shown on Table XXV. The drop in fourth grade total battery means of 2.0 months is not statistically significant ($p > .05$). In the total battery mean scores, the strongest improvement is shown by the fifth and sixth grades, each with a gain of 5.0 months.

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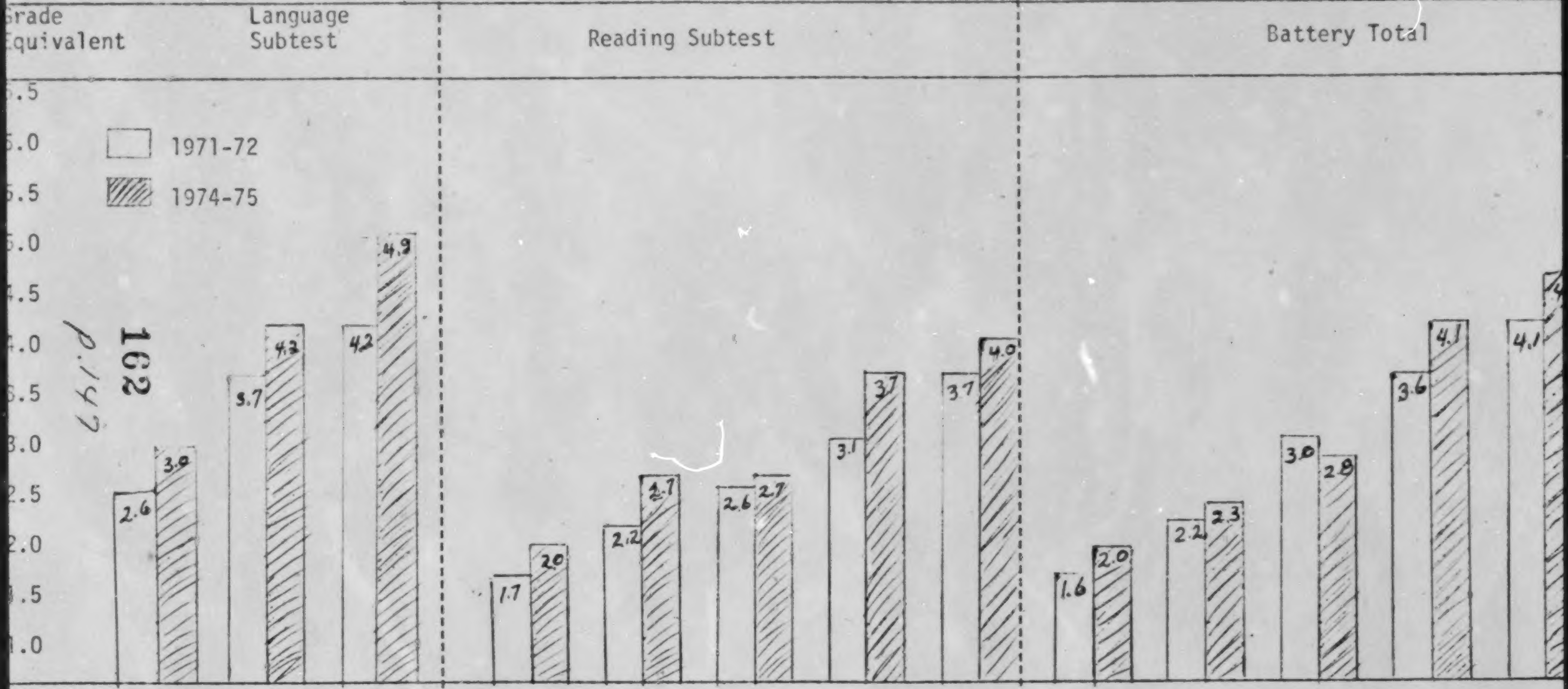
insert TABLE XXV here

Discussion. The changes in achievement test performance from 1971-72 to 1974-75 present a picture of significant improvement, particularly strong in the knowledge and skills measured by the language subtest of the Metropolitan Achievement Test. Covered in

TABLE XXV

Metropolitan Achievement Test Grade Equivalent Results for 1971-72 and 1974-75



	Language Subtest			Reading Subtest					Battery Total				
Grade Level:	4	5	6	2	3	4	5	6	2	3	4	5	6
n:	58	60	60	58	62	58	60	60	58	62	58	60	
F:	9.91	7.89	11.19	24.76	11.54	1.98	14.09	2.07	43.07	2.43	4.56	14.34	12
p:	<.01	<.01	<.01	<.01	<.01	>.05	<.01	>.05	<.01	>.05	>.05	<.01	<

this subtest are reference skills, spelling, and knowledge of parts of speech. Whatever part of the improvement is not attributable to error owing to differences in who and how many worked in test-scoring from the 1971-72 test to the 1974-75 test may be credited to other effects. Just how much of this improvement can be attributed to the Library/Media Center's classroom catalog procedures and numerous resources cannot be said. It is probably safe to observe that the Library/Media Center has been effective in bringing about the improvement, in conjunction with other variables. This effect of library/ media resources has probably been most pronounced in classrooms where teachers acknowledge the value of these resources for curriculum planning. Library/Media Center procedures have probably served to bring about a focus of classroom attention on the reference skills needed to gain access to information.

With respect to the reading gains, the Library/Media Center serves as a provider of resources to the classroom teachers who choose to take advantage of them. For example, it was pointed out earlier that teachers in High Library Use schools read stories aloud to their students more often than teachers in Low Library Use schools. This feature of classroom reading activity occurs along with more time for reading instruction. It may be that the Library serves as a regular reminder to teachers that students have a reason for needing a good program of reading instruction. It may also serve as a motivator to students in their effort to learn to read.

Gains in the total battery mean scores are encouraging, too, considering the curriculum efforts being made in the Bethel Agency, from up-to-date curriculum materials to special education efforts to the library resources. Again, the Library/Media Center must be granted credit along with other efforts. The vast array of resources other than books should be mentioned in this connection. With filmstrips, sound filmstrips, video tapes, and 8 millimeter filmloops numbering in the thousands, opportunities to broaden the scope of classroom teaching and learning are unlimited, for all practical purposes.

A point should be made here about reference to national norms with respect to the Alaskan students' scores. Evaluation of validity of the Metropolitan Achievement Tests indicates that in reading and language, it rates from poor to fair on a three-point rating scale of poor to good. (Hoepfner, 1970) In other words, it is not as good a measure as it might be in measuring what it purports to measure. Thus, rather than comparisons with national norms, the comparisons are probably more usefully made with past tests administered to the same population, for purposes of evaluating gain or loss in particular areas of learning. This would be particularly true for populations of such a different environmental background from American society in general as the Alaskan students are. (cf, Briére, 1973)

B. Metropolitan Achievement Test Scores and Cloze Test Results

Introductory discussion. In general, cloze tests and conventional tests of reading comprehension seem to measure the same processes. Researchers have found that as a measure of reading comprehension, cloze tests correlate positively with conventional reading comprehension tests. For example, Bormuth reports correlations in the range of .73 to .84. (Bormuth, 1968)

While there is a distinction to be drawn between comprehension tests and achievement tests, one investigation that seems worthwhile is of the relationship between the cloze tests administered for this study and the Metropolitan Achievement Test administered in the same general time period, the spring of 1975.

While different interpretations are intended for comprehension and achievement measures, often the test items will appear quite similar, and may be tapping similar processes. For the present study, cloze procedures are the most direct way to find out how well the Alaskan students can read selected library materials, one important objective of this study. The achievement tests administered to the Alaskan students are intended to find out how well the Alaskan students have learned certain concepts. Among these concepts are some that pertain to reading and others which pertain to explicit language knowledge. To the extent that a positive relationship obtains between the two kinds of measures, it is probable that they are tapping the same kinds of processes.

It is a familiar argument to those who work as educators among America's culturally unique students that achievement tests do not measure just what they purport to measure, but rather reflect a difference from the norm in cultural and linguistic background. That cloze tests provide a measure not only of reading comprehension but also of language proficiency has also been supported. (cf, Oller, 1971; Klare, 1973) The language proficiency factor is reflected particularly when function words, like articles, conjunctions, and prepositions are observed in a completed cloze test. Native speakers of the language of the test usually have a much easier time filling in these words, which have been taken for granted all their speaking lives. For nonnative speakers of the language of the test, these function words are evidently difficult. Klare supposes this is so because nonnative speakers tend to learn the meaning-bearing, or content words more readily (e.g., nouns, verbs). To the extent that a positive relationship is found between the cloze tests and the achievement tests, the achievement test's nature as a language measure may be suggested.

Finally, to the extent that a positive relationship is found between the two measures, concurrent validity may be implied for the cloze tests. This observation is presented with caution, because the uses for the two tests are intended to be different, as discussed above. Furthermore, with the achievement test given a poor to fair rating in validity by test evaluators, it could also be the case that the cloze test in this case is a more valid measure of reading and language comprehension than the achievement test.

Research hypotheses. A positive relationship will be found between cloze test results and results of (i) the reading subtest, (ii) the language subtest, and (iii) the battery as a whole for the Metropolitan Achievement Test, for grade two, and grades three through six. It is anticipated that the strongest relationship will be between cloze results and the reading subtests.

Subjects, materials, and methods. For the 12 schools in which cloze testing was conducted, the 1974-75 Metropolitan Achievement Test classroom mean scores were used for grades two through six, along with classroom mean cloze scores for these grades.

The use of classroom mean scores, rather than individual scores is not ideal, but student names were not requested, for reasons of confidentiality, on the cloze tests and limited time at the testing sites precluded coding procedures. Furthermore, the Metropolitan Achievement Test was administered and the results were gathered by Bethel Agency personnel for Agency purposes, prior to the visits for cloze testing. Coordination of each student's two tests for coding purposes was not feasible. The resulting observation to be made here is that correlations will generally be lower using mean scores in this manner, than when using individual scores.

Null hypotheses. There will be no significant positive correlations between cloze scores and Metropolitan Achievement Test scores in any of three areas: reading subtest, language subtest, and total battery, at the grade two level, or at the grade three through grade six levels.

Statistical treatment. Pearson Product Moment correlations were sought for classroom mean cloze test results and classroom mean achievement test results, for each of the three areas (reading, language, and battery) separately. Because grade two achievement test results had no language component, grade two test results were analyzed only for reading and total battery along with the cloze test results. Test results for grades three through six were analyzed as a group in each of the three areas. For grade two correlations, this provides a much smaller number of cases than is usually desirable. The results are included in spite of this situation.

Results. For achievement test reading and language subtests and for the total battery results, statistically significant correlations are evident with cloze test results.

This finding holds for grades three through six, as well as for grade two. Table XXVI presents the findings for each of the analyses.

insert TABLE XXVI here

Discussion. The significant correlations between *Metropolitan Achievement Test* results and cloze test results suggest several ideas.

First, the correlations might suggest that the cloze tests and the achievement tests are tapping something similar by way of processes and knowledge the students bring to the tasks. The fact that the third through sixth grade correlations between cloze test results and both reading and total battery results are identical (.61) could be taken to indicate that reading and language proficiency in general are major features of student achievement which are being reflected in the *Metropolitan Achievement Test*, possibly moreso than the specific areas of knowledge the test is intended to measure. This notion arises from the observation that cloze tests are thought to measure overall reading and language proficiency, and not just reading comprehension. (Klare, 1972) The higher correlation between

TABLE XXVI

Correlations between Mean Scores on Cloze Tests and the Metropolitan Achievement Test

Grade:	Two	Three through Six
Reading Subtest:	.67 ($p < .02$)	.61 ($p < .01$)
Language Subtest:	_____	.56 ($p < .01$)
Total Battery:	.81 ($p < .01$)	.61 ($p < .01$)
	n=12	n=48

total battery and cloze results over the reading subtest and cloze results for second grade would seem to support this suggestion.

An interesting question arises over why the correlations between the cloze test and the reading subtest are not higher than the other correlations. There are at least two possible answers which may help explain this situation. First, it may be that the reading subtest measures highly specific skills which do not correspond with all the processes and skills which comprise overall reading proficiency. For example, cloze tests are not designed to provide a specific measure of a student's skill in extrapolating from one piece of information to a logical, but hitherto unmentioned, outcome. That cloze tests will not measure separately the different kinds of comprehension abilities that conventional (e.g., multiple choice) tests will measure is acknowledged by researchers. (cf, Klare, 1972) Another feature that differentiates between the two types of tests is that students have a complete paragraph to search through for answers to questions on the reading subtest. The cloze test is, by nature, incomplete text, with blanks to be filled in every n number of spaces. Taylor, the originator of cloze procedure, found higher correlations between cloze and conventional tests when subjects were allowed to read the complete text prior to taking a cloze test on the same text. (Taylor, 1956) It should be noted in this connection that when a complete reading is allowed before cloze testing, scores are generally higher overall, but individual scores still correspond to individual scores on the same measure without prior reading of the complete text.

The lowest correlation is between the cloze results and the language subtest results (.56). If cloze testing is thought to measure language proficiency, this might appear to be an unexpected result. However, the achievement test is designed to measure the more explicit kinds of language skills taught in school (e.g., reference skills, knowledge of parts of speech, and spelling), while cloze tests seem to tap the implicit kind of language proficiency native speakers of a language do not need to attend school to learn. The fact that this implicit kind of proficiency is needed by students who take the language subtest is supported by the fact that there is a positive correlation between the two, cloze test and language subtest.

Finally, to the extent that validity is assumed for each of the tests, cloze and achievement, the correlations may suggest a measure of concurrent validity for the cloze tests used in this study. That is, the cloze measure appears to be a good one for the purposes of this study: to find out how well the Alaskan students could read selected library materials.

Summary and conclusions

Longitudinal achievement as measured by the *Metropolitan Achievement Test* for the school years 1971-72 and 1974-75 has been one major topic of this section. The relationship between the cloze tests administered during the spring of 1975 and the 1974-75 *Metropolitan Achievement Test* has been the other main topic.

The picture of achievement is favorable, assuming that scoring procedures which differed on the two test occasions do not add a significant amount of error to the 1974-75 results of the Metropolitan Achievement Test. Statistically significant gains over the four-year period are evident for the language subtest, the reading subtest, and the total battery at most grade levels. The strongest gains are in the language subtest (about 5.3 months), with reading (about 3.6 months) and total battery (about 2.6 months) following. Of thirteen analyses, only one revealed a decline over the four-year period. This drop, not statistically significant, was 2.0 months in total battery for 1974-75 fourth graders.

Correlations between results of the Metropolitan Achievement Test and the cloze tests administered to the students in the spring of 1975 are also statistically significant, in a positive direction. Discussion of these findings centered on the suggestion that both the cloze test and the Metropolitan Achievement Test may be tapping similar processes, those of general reading and language proficiency. In addition the correlations are taken as indicating concurrent validity for the cloze measures used in this study. This indication is supported to the degree that validity of the achievement test is assumed for these students.

It may be safely concluded that Library/Media Center resources can share in the responsibility for the achievement gains. However, owing to other curricular variables, it is not possible to say just how great this share is. It is evident that the Library/Media Center has served as a very valuable resource for teachers who take advantage of it.

Among other things, the procedures for ordering materials from the

Library, and the subsequent receiving of shipments in the village schools, may combine to mobilize a focus of attention on skills needed to gain access to information, and on reading skills needed to benefit from the resources.

V. Reading Preferences and Attitudes of High and Low Library Users

Introductory discussion

Topics in this section of the report are (i) student reading preferences, (ii) attitudes of the students toward independent reading and being read aloud to, and (iii) the relationship between the number of student reading preferences and students' reading comprehension scores.

The information was gathered to be of help to the Center in its tasks of accommodating student reading preferences and encouraging students and their teachers to explore the wide variety of reading materials available in the Library/Media Center.

While a number of interesting questions arise with respect to what kinds of stories the children like to read, and with respect to their feelings about listening to their teachers read aloud to them, several of the most pertinent are explored here.

First, it was thought that High User students might have a broader range of reading interests, as far as the topics of books they choose, than would Low User students. This thought is based on the assumption that High Users probably have been exposed to a broader range of reading material, as well as other library material, than have Low Users.

Another question of interest involves the relationship between the students' cloze reading comprehension scores and the number of different reading topics they prefer. While *amount* of library use makes a significant difference in student reading comprehension performance, it may be useful to know whether or not *variety* in Library Use makes a similar difference.

Finally, the matter of student attitudes toward independent reading as related to Library Use is explored. Along with student attitudes toward independent reading, their perceptions of how often their teachers read aloud to them is investigated. Student feelings toward having teachers read aloud are also part of the data reviewed in this part of the report.

Research hypotheses

High Library Users will exhibit a preference for a broader range of reading topics than will Low Library Users. A positive correlation will be exhibited between the students' number of reading preferences and their cloze reading comprehension scores.

Subjects, materials, and methods

Students in fourth through sixth grades in the twelve schools in which cloze testing took place were administered a *Reading Preference Questionnaire*. Responding to the instrument were 110 fourth graders, 82 fifth graders, and 88 sixth graders.

The questionnaire consisted of three main parts. First, attitudinal information was sought regarding the frequency with which teachers read aloud and student feelings about independent reading. Next, a list of reading topics was given on which students could check the topics of books they had read most recently. Third, a list of 26 topics was given from which students could select those they liked best. All questions or statements required only checkmarks in response.

Each student in a class was given a questionnaire. The class was told that responses would be helpful to the librarian. The test administrator read aloud each item on the form and allowed time for students to check their responses. Students were asked to consider carefully each of the story topics presented for their review, and to check only those topics of greatest interest to them. A statement was made to illustrate the general meaning of each topic, to help students relate each topic to real reading material.

Questionnaire responses were tallied in each of the three main categories for both High Users and Low Users at each grade level.

Null hypotheses

There will be no significant differences in the number of reading preferences expressed by High Users and Low Users at the fourth, fifth, or sixth grade level. There will be no significant positive correlation between number of student reading preferences and students' cloze reading comprehension scores.

Statistical treatment

An analysis of variance for unequal *ns* was performed for each grade level, using the Library Use average for each school (assigned to each student within the school) and the number of reading topic preferences checked by each student.

A Pearson Product Moment correlation was determined on the basis of classroom mean cloze scores and mean number of reading preferences for each classroom, for fourth through sixth grades.

Results

At each grade level, the mean number of reading preferences is higher for the High Users than for the Low Users. This difference is statistically significant for fourth grade and fifth grade ($p < .01$). Sixth grade High Users also selected more reading topics than did their Low User peers, although the difference is not statistically significant ($p > .05$). Table XXVII presents the mean number of reading preferences and F-ratios for the three grade levels.

insert TABLE XXVII here

While the number of preferred reading topics differs significantly between High and Low Users, the variety of topics preferred evidently has no direct relationship with reading comprehension scores. The Pearson Product Moment correlation between these two variables for all fourth through sixth grade students combined is not statistically significant ($r=.06$). Amount of Library Use, on the other hand, correlates significantly with reading comprehension

TABLE XXVII

Mean Number of Reading Preferences of Fourth,
Fifth, and Sixth Grade High and Low
Library Use Students

Library Use:	High	Low	F-ratio	p
Grade:				
Four	4.98	3.59	43.55	<.01
	n:45	n:65		
Five	5.40	3.29	15.37	<.01
	n:44	n:38		
Six	4.63	4.13	.95	>.05
	n:41	n:47		

scores ($r=.65$, $p<.01$).

Although there are differences between the High and Low Use groups in numbers of different reading topics preferred, the types of stories most preferred by both groups are more similar than different.

Jungle stories, Alaska, and fairy tales are consistently among the most-preferred topics of students in all three grades. Furthermore, High and Low Users agree on four out of the five most-preferred topics at each grade level. Table XXVIII presents numbers of students who checked each topic for the most-preferred topics. Table XXIX is a rank order list of topics, from most to least preferred, for each grade level.

Among the least-preferred topics, High and Low Users have several in common at each grade level, as well. Table XXX presents topics checked by the smallest percentage of students in each grade level.

insert TABLE XXVIII here

insert TABLE XXIX here

insert TABLE XXX here

A similar effect characterizes the findings when the children are asked about the topics of books they have read or looked through most

TABLE XXVIII

*Most-preferred Story Topics of Fourth, Fifth and Sixth Grade High and Low Library Users

Grade	Four	n**	Five	n	Six	n
High Users	1. Jungle stories	23	1. Jungle stories	23	1. Mystery	25
	2. Alaska	21	2. Hunting	15	2. Fairy tales	22
	3. Fairy tales	19	3. Alaska	14	3. Alaska	12
	4. Hunting	17	4. Fairy tales	14	4. Jungle stories	11
	5. School	15	5. War	14	5. History	11
Low Users	1. Animals	22	1. Jungle stories	17	1. Jungle stories	20
	2. School	20	2. Alaska	13	2. Fairy tales	18
	3. Jungle stories	19	3. Fairy tales	12	3. History	14
	4. Fairy tales	19	4. School	10	4. Alaska	13
	5. Alaska	14	5. Hunting	8	5. Mystery	12

*The five topics receiving the highest number of checkmarks from students
**n equals the number of students who checked the topic

TABLE XXIX

Rank Order of Reading Topics from Most-preferred to Least-preferred for Fourth, Fifth, and Sixth Grades

Grade:	Four		Five	
Library Use:	High	Low	High	Low
	Jungle	Animals	Jungles	Jungles
	Alaska	School	Hunting	Alaska
	Fairy tale	Jungles	Alaska	Fairy tales
	Hunting	Fairy tales	Fairy tales	School
	School	Alaska	War	Hunting
	Children my own age	Children my own age	Mystery	Animals
	War	War	Sports	History
	Sports	Hunting	Spies	Children my own age
	Animals	Airplanes	Animals	Mystery
	Outer space	Children	Outer space	Danger
	Mystery	Danger	Adventure	Outer space
	Airplanes	Mystery	Children my own age	Science fiction
	Danger	The country	History	Nature
	History	History	School	Spies
	Adventure	Spies	Danger	Different countries or places
	Children	Ships and oceans	Airplanes	Famous people
	Spies	Famous people	Famous people	Adventure
	Ships and oceans	Sports	Ships and oceans	Sports
	Different kinds of jobs	Outer space	Science fiction	Ships and oceans
	Famous people	Different countries or places	Different countries or places	War
	Nature	Cities	Different kinds of jobs	Children
	Cities	Nature		

continued

TABLE XXIX, continued

Rank Order of Reading Topics from Most-preferred to Least-preferred for Fourth, Fifth, and Sixth Grades

Grade:	Four		Five	
Library Use:	High	Low	High	Low
	Science fiction	Adventure	Children	Different kinds of jobs
	Different countries or places	Different kinds of jobs	Cities	Cities
	Ordinary people	Ordinary people	The country	The country
	The country	Science fiction	Ordinary people	Ordinary people
			Nature	Airplanes

continued

TABLE XXIX, continued

Grade:	Sixth	
Library Use:	High	Low
	Mystery	Jungles
	Fairy tales	Fairy tales
	Alaska	History
	Jungles	Alaska
	History	Hunting
	Children my own age	Mystery
	School	Children my own age
	Spies	Animals
	War	War
	Danger	Ships and oceans
	Children	School
	Famous people	Spies
	Adventure	Sports
	Hunting	Different countries or places
	Ships and oceans	Danger
	Animals	Airplanes
	Different kinds of jobs	Outer space
	Sports	Adventure
	The country	Famous people
	Outer space	Science fiction
	Airplanes	Different kinds of jobs
	Ordinary people	Children
	Science fiction	Cities
	Different countries or places	Nature
	Nature	Ordinary people
	Cities	The country

TABLE XXX

*Least-Preferred Story Topics of Fourth, Fifth, and Sixth Grade High and Low Library Users

Grade:	Four	n of checks	Five	n of checks	Six	n of checks
Library Use:						
High	Cities	2	Children	4	Ordinary people	2
	Science fiction	2	Different kinds of jobs	4	Science fiction	1
	Different countries or places	2	Cities	3	Different countries or places	1
	Ordinary people	1	The country	2	Nature	1
	The country	1	Ordinary people	1	Cities	1
			Nature	0		
Low	Nature	2	Children	2	Science fiction	4
	Adventure	2	Different kinds of jobs	2	Different kinds of jobs	4
	Different kinds of jobs	2	Cities	1	Children	4
	Ordinary people	0	The country	1	Cities	4
	Science fiction	0	Ordinary people	0	Nature	2
			Airplanes	0	Ordinary people	1
					The country	0

*Topics receiving the fewest number of checkmarks from students recently. Sixth grade students' topics of most-recently read books are identical for both Library Use groups. Both fourth and fifth grade High and Low Users share four of five topics in common. Table XXXI presents the topics of recently-read books checked most often by students.

insert TABLE XXXI here

In their attitudes toward being read aloud to and toward independent reading, High and Low Users are strikingly similar, too. Table XXXII presents the percentages of student responses to multiple choice statements regarding student perception of the frequency with which their teachers read aloud, student attitudes toward teachers' reading aloud to them, and toward independent reading.

insert TABLE XXXII here

Among fourth grade students, more than three-fourths of both groups claim to like to listen to their teachers read aloud. Evidence is stronger that this is a daily occurrence for High Users than for Low Users (25 percent compared to 9 percent). However, 56 percent of the High Users check "not very often" or "never" while 40 percent of the Low Users check these categories with respect to how often teachers read aloud to them.

Among fifth graders, about the same percentages of both groups think their teachers read aloud to them either daily or at least once

TABLE XXXI

Most Recently-read Topics of Fourth, Fifth, and Sixth Grade High and Low Users

Library Use:	High		Low		High		Low	
Grade	Most-often-checked				*Least-often-checked			
Four	Eskimos	18	Eskimos	20	Real life	2	Sports	2
	Alaska	16	Alaska	19	The sea	2	Pirates	2
	A family	12	Fairy tale	13			Western	2
	Animals	11	Animals	10			Real life	1
	Children	11	A family	10			Cars	1
							The sea	0
							Adventure	0
Five	Eskimos	17	Eskimos	14	History	2	Real life	2
	Alaska	15	Alaska	12	Cars	2	History	2
	Animals	14	Fairy tale	7	The sea		Another state, country, or part of the world	2
	Fairy tale	11	Animals	6	Another state, country or part of the world	1	Sports	1
	A family	9	Children	6			Pirates	1
							Cars	0
							The sea	0
Six	Mystery	16	Eskimos	14	Sports	2	Another state, country or part of the world	2
	Adventure	11	Fairy tale	9	Real life	1	Children	2
	Eskimos	10	Mystery	9	Cars		Real life	2
	Fairy tale	9	Alaska	8	Another state, country or part of the world	0	Pirates	1
	Indians	9	Indians	8	The sea	0	The sea	0

*Checked two times or fewer

TABLE XXXII

Student Attitudes toward Independent Reading and Teachers Reading Aloud

Grade:	Fourth		Fifth		Sixth	
Library Use:	High	Low	High	Low	High	Low
Number of Students:	45	65	44	38	41	47
1. I like to listen to stories my teacher reads aloud.						
Yes:	76%	89%	91%	84%	85%	85%
No:	20	6	9	11	13	13
No response:	4	5	0	5	2	2
2. My teacher reads aloud to us						
Every day:	25%	9%	23%	34%	10%	17%
At least once a week:	17	42	20	11	17	21
Not very often:	20	37	34	55	68	30
Never:	36	3	23	0	0	28
No response:	2	9	0	0	5	4
3. Reading silently by myself is						
What I like to do best:	31%	18%	48%	39%	49%	19%
Fun sometimes:	19	22	16	24	29	47
Not too much fun:	4	7	2	13	0	0
Something I don't like to do at all:	4	7	2	3	2	4
Good for me:	38	43	32	18	20	21
Not good for me:	2	3	0	3	0	0
No response:	2	0	0	0	0	9

a week. However, 23 percent of the High Users also check the category "never" while no Low Users check this category.

A somewhat higher percentage (ten percent) of sixth grade Low Users than High Users respond that their teachers read aloud to them daily or once a week. Among sixth grade High Users, 68 percent claim their teachers do not read aloud to them "very often," more than twice as high a percentage as among Low Users. However, no High Users claim they are never read aloud to, while close to a third of the Low Users feel that this is the case.

The students in all three grades are in strong agreement that they like to listen to their teachers read aloud to them, irrespective of whether they are in High or Low Library Use groups. At the fourth grade level it is notable that while only 9 percent of the Low Users agree that their teachers read aloud to them every day, a dramatically higher percentage of these children "like to listen to stories my teacher reads aloud." For them, this favored activity appears to take place more often on a weekly basis instead.

High Library Users at all three grade levels outnumber the Low Users strikingly in agreeing that independent reading is "what I like to do best," a favorite activity. Low Users seem to opt more for agreeing that independent reading is "fun sometimes.." Combining the two categories, High Users still outnumber the Low Users at every grade level, from one to 12 percent. Most of the rest of the students, both High and Low Users, agree that independent reading is "good for me."

Discussion

A wider range of reading interests is evident among High Library Users than among Low Library Users, significantly so for fourth and fifth graders. Given exposure to more library materials, the children evidently develop more breadth of interest in a variety of reading materials. Yet, it is evidently not the variety of topics per se which enhances their reading comprehension, but rather the amount of reading material.

There are more similarities than differences among High and Low Users on the matter of what kinds of stories they prefer most, as well as what kinds of stories they do not seem to like. These results indicate that the children are following a more general pattern common to both groups of Library Users. In part, this overall pattern is common among children in general. For example, Rudman's study (1955) indicates an increasing interest from grade four to grade eight in mystery stories. This increase in interest is evident among the sixth graders in the present study. In addition, the kinds of topics preferred most by boys and preferred most by girls are evident in the more-highly-preferred topics of the Alaskan children. Norvell (1959) found that boys like adventure, physical struggle, patriotism and heroism. Girls like adventure, home and school, mystery, the supernatural, domestic animals, and patriotism. On the Alaskan children's lists, war, history, hunting, and Alaska may reflect the realism, adventure, and heroism found to be preferred by boys in general. Mystery, jungle stories, fairy tales, school, and children may reflect the imaginary adventure and age-group relationships which Norvell found most to the girls' liking. Rudman's study of 6,313 children found few sex differences in reading preferences. Of more interest for this study is his finding of little difference in reading interests among rural, urban, and metropolitan populations.

A major exception from the commonality of reading interests which Alaskan children seem to share with other children across the country is in the realm of science fiction and space travel. Such topics are ranked relatively low by Alaskan children. This low preference may result from these children's remoteness in experience from the world of technology. It may be taken as support for the Library/Media Center's philosophy regarding the wide variety of resources which should be made available to this population. Certainly, the commonality of reading interests these children share with other children is testimony to the need for the wide range of materials available in the Regional Library/Media Center. Airplanes is a topic which also ranks low on the Alaskan children's list of reading preferences. Perhaps this topic is subsumed, to their way of thinking, under the topic of Alaska. There is every reason why it should be. However, aside from these few topics, in general, the kinds of topics the Alaskan children appear to like reflect the similarity of their interests with other children their own age in vastly different social, geographic, and economic circumstances.

With respect to the children's attitudes toward reading, High and Low Users, again, are more alike than different. Both groups in all three grades claim to like listening to their teachers read aloud, to a much greater extent than they appear to actually be granted this opportunity. The major difference in the attitude categories is that High Users claim independent reading as a favorite activity to a much greater extent than do the Low Users. Another notable feature of the evidence is that while daily and even weekly read-aloud occasions decline from fourth to sixth grade, the percentage of children who like it, in both High and Low Use groups, does not. Sixth graders, as much as fourth and fifth graders, agree that they enjoy this activity. In the fourth grade, a higher incidence of "no" responses from High Users to liking to listen to the teacher read aloud may be related to better reading proficiency among these children than among Low Users. It may also be related to stronger personal preferences in reading topics, since the percentage of High User fourth graders who claim independent reading as a favorite activity is twice as high as among Low Users.

The fact that many more students agree that they like to be read aloud to than agree that they are read aloud to daily or weekly suggests that teachers could implement a daily read-aloud activity with little fear of antagonizing their students.

The value of such an activity should not be underestimated. Teachers' goals for students generally include proficiency in independent reading. The fact is that children will be able to read independently with comprehension only to the degree that their language background and experience background together enable them to predict the material they are attempting to read, on the basis of specific language cues that have come before on the printed page. (Goodman, 1973; Smith, 1971)

The teachers' reading aloud to students can provide three vital kinds of language information: about the sound system of the language, about the structural system of the language, and about meanings in the language. In addition, reading aloud to students can provide vicarious experience that can expand the students' knowledge of the world, and enhance the store of meanings they can call forth to interpret what they read by themselves.

The value of both the language and experience information teachers can provide their students by reading aloud to them should not be denied out of fear that it is taking up valuable time or fostering laziness among students who should be reading for themselves. As was pointed out earlier in this chapter, Low Library Use students have been exposed to a good deal more independent reading time than have High User students, apparently not to very beneficial effects without a substantial amount of reading instruction time and teacher reading-aloud time.

Perhaps the surprising and gratifying feature of the children's attitudes toward reading, by themselves and by their teachers, is that they appear to hold the activity in such positive regard generally, considering the difficulties reflected by their reading comprehension test scores. It seems that even if independent reading is not a favorite activity, or even "fun sometimes," many students still perceive it as valuable ("good for me") whether they are High Users or Low Users, and in spite of relatively low test scores on both cloze and standardized reading tests.

Summary and conclusions

High Library Use students in fourth, fifth, and sixth grades appear to have a wider range of reading interests than do Low Library Users in these grades.

High Use students also check independent reading as a favorite activity to a much greater extent than do Low Users. Many Low Users do, however, agree that independent reading is at least "fun sometimes."

With these two observations, the differences between the two groups disappear for all practical purposes.

More than three-fourths of the High and Low Users in each of the three grades say that they like to listen to their teachers read stories aloud. A substantially smaller percentage of both High and Low Users agree that their teachers read aloud daily to them.

The benefits to students of teachers reading aloud should not be overlooked by teachers who may worry that they are doing something for children that the children should be doing for themselves. With teachers taking some time to give explanations of ideas and vocabulary items as they read aloud, students should be able to enjoy stories at their interest levels that they might not be able to enjoy at their present levels of reading comprehension proficiency.

Although High and Low Users differ in the number of topics they enjoy reading about, the kinds of topics they choose are much more alike than different. Both in the most-preferred topics of all the children and in the least-preferred topics, there are more similarities than differences between High and Low Users.

Perhaps even more interesting is the fact that the kinds of stories the Alaskan children claim to enjoy are quite like the topics that children in general enjoy at each of the three grade levels, according to several major studies of children's reading interests.

This finding lends strong support to the Library Director's philosophy of making available the same high quality and comparable wide range of reading materials as are recommended for children's libraries anywhere in the country.

A gratifying feature of the students' attitudes is that they appear to hold reading in generally high regard, in spite of relatively low overall reading comprehension scores both on cloze tests and on standardized achievement tests.

CHAPTER V

SOME RELATIONSHIPS BETWEEN LIBRARY USE AND CLASSROOM VARIABLES

Introductory discussion

The use made of the Bethel Regional Library/Media Center is a factor which is obviously intimately involved with many other factors. In the same way, the students' cloze reading comprehension scores are also affected by factors other than Library Use alone.

The questions addressed in this chapter are an effort to find out what classroom factors seem to contribute to Library Use and what classroom factors seem to contribute to cloze reading comprehension scores.

Information yielded by the *Teacher Background Questionnaire* provided some ways to look more closely at a few factors that may be most closely associated with both reading comprehension scores and with the amount of Library Use evidenced by different schools.

Included in the information which is useful in investigating such relationships are daily classroom schedules of instructional events, including reading instruction time, independent reading time, teacher reading aloud time, and time allotted to other language-related activities such as viewing of filmstrips, movies, and video tapes and listening to records.

Also among the factors explored in this chapter are teaching experience, teachers' attitudes toward instructional planning, and the amount of time, on the average, given to daily instructional planning.

The first major question investigated deals with the amount of time given by teachers in High Library Use and Low Library Use schools to (i) formal reading instruction, (ii) reading stories aloud to the children, (iii) student independent reading time, and (iv) filmstrips, movies, video tapes, and similar language-related activities.

The other questions seek to find out what the three best predictors are of (i) Library Use, and (ii) cloze reading comprehension scores.

Subjects, materials, and methods

The information used in this chapter comes from two major sources. Those sources are the cloze test scores of students in second through sixth grades in ten of the twelve schools in which testing was conducted, and information volunteered by the teachers of these students on the Teacher Background Questionnaires they filled out. Questionnaires from two of the twelve schools were not returned, so student performance data from those schools could not be included.

Scores were derived for each teacher on several factors as follows.

1. Teaching experience: The number of years each teacher recorded as having served professionally as a teacher comprised one such score.
2. An instructional planning score was derived from two areas of information:

a) One area was the priority given by a teacher to instructional planning in a list of preparatory responsibilities:

   - preparing or arranging classroom and materials
   - locating materials and supplies
   - ordering teaching aids
   - evaluating student work
   - specific lesson planning.

   Teachers were asked to rate these items from 1 to 5 in order of their priority in terms of available time. For ease in responding on the questionnaire the rating scale placed 1 as the highest priority item and 5 as the lowest. The scale was reversed for scoring, however, so that 5 reflected the highest priority and was compatible with the planning time scores.

b) The other source for the planning score was a time figure teachers checked to indicate the amount of daily or weekly time given to planning the classroom program (1 hour, 2 hours, 3 hours, 4 or more hours daily; 1-3 hours, 4-7 hours, 8-10 hours, more than 10 hours weekly). A daily average was calculated for each teacher's planning time and added to the priority rank (1 to 5) the teacher assigned to specific lesson planning.

3. Another score derived for each teacher was the average daily amount of time given to formal reading instruction. Sources for this score were two different questionnaire items:

   a) the teacher's daily time schedule: the teacher was asked to list activities (e.g. 8 a.m. to 8:30 a.m.) of a typical daily schedule.

   b) the second item asked teachers to check subjects taught daily or weekly on a list provided, along with the approximate amount of time given (15-30 minutes, 30-60 minutes, 60 plus minutes) to teaching each subject.

Student independent time was listed separately in this item as was time for reading stories aloud and for other language-related activities (e.g., filmstrips, and videotapes).

An average daily time for formal reading instruction was derived from the daily schedule and confirmed from responses on the second item.

4. An average daily figure reflecting teacher reading aloud time was derived from item 3b above and confirmed with the daily classroom schedule response.

5. An average daily figure reflecting time allotted to filmstrips, movies, and similar language-related activities was also derived from item 3b above and confirmed with the daily classroom schedule response.

6. A different questionnaire item on use of student independent time yielded an average daily time given to independent reading (listed separately along with drawing or other arts and crafts activity, conversation, games, research projects, and other).

Statistical treatment

The classroom times allotted to various kinds of reading and language-related activities were tabulated for High Use and Low Use schools and averaged for each grade level. A total actual time given to the combination of all such activities was determined for each grade level in both types of schools. The percentage of the total time given to each of the four different activities was calculated for each grade level on this basis.

In order to find out what variables best predict Library Use and reading comprehension scores, three stepwise regression analyses were conducted.

Library Use was the dependent variable in two of these analyses. For one such analysis the Library Use figure (average per pupil orders annually for 1973-1975) was entered with the predictor (independent) variables of cloze scores, average daily reading instruction time per classroom, average daily independent reading time, and the readability level of the cloze passages. The use of 18 mean cloze passage scores from each of ten schools yielded 180 cases. The 18 cloze scores used from each school were the classroom mean scores for each cloze passage comprising the test for each grade level (four passages in grades three through six, and two passages in grade two).

In the second analysis with Library Use as the dependent variable, the predictor variables entered were teacher attitude toward, and time given to, instructional planning, length of professional teaching service, and average daily reading instruction time per classroom.

In the third analysis, cloze reading comprehension scores were entered as the dependent variables. Potential predictors (independent variables) of cloze reading comprehension scores which were entered were Library Use, average daily reading instruction time, and the readability levels of cloze passages used.

In the analyses with four independent variables, instructions in the computer program were for the operations to select only the three best predictors, deleting the weakest one.

For all three analyses the standard regression method available in the multiple regression computer program in Statistical Package for the Social Sciences was employed. Thus, each independent variable was entered into the analysis as if it had been added to the regression equation in a separate step after all other variables had been included. This method contrasts with the hierarchical method in which the researcher determines the order in which variables are to be entered and thus builds in probable inflation of one (desired) predictor at the expense of others. This method was also selected for its appropriateness in analysis of non-causal relationships among independent variables. While certain causes and effects may pertain among certain of the predictor variables, the standard regression method makes possible finding out which, if any, of the variables are the most closely related to the dependent variable.

Two separate analyses were run for the prediction of Library Use to allow for a higher ratio of number of cases to the number of independent variables. The variance (R^2) figures reported are adjusted R^2s, accommodated in the computer program for the number of cases.

Null hypotheses. There will be no linear relationship exhibited between Library Use and (i) teachers' time for and attitude toward instructional planning, (ii) length of teaching experience, (iii) reading instruction time, and (iv) independent reading time. There will be no linear relationship between Library Use and (i) cloze reading comprehension scores, (ii) reading instruction time, (iii) independent reading time, and (iv) readability scores of the cloze passages. There will be no linear relationship between cloze reading comprehension scores and (i) Library Use, (ii) reading instruction time, (iii) independent reading time, and (iv) readability scores of cloze passages.

Results

Four kinds of reading/language activities are viewed in this section, in terms of the average daily amount of time teachers in High Use and Low Use schools give to them. The four major activities are (i) reading instruction, (ii) teacher reading aloud to students, (iii) independent reading time for students, and (iv) filmstrips, movies, video tapes and similar language-related activities.

The first two activities,reading instruction and reading aloud to the children, are considered here as generally more teacher-guided activities than the second two. It is evident from responses to the Library/Media Questionnaire and to the Teacher Background Questionnaire that the activities of independent reading and filmstrip viewing (video tapes, etc.) are generally held by the teachers as independent activities, requiring less teacher-student interaction specific to the content of materials being read or viewed.

Table XXXIII presents the average actual number of minutes allotted daily by High Use and Low Use teachers to each of the four activities in grades two through six. Table XXXIV presents the percentages which the actual times represent in terms of the total time each set of teachers (High Use and Low Use at each grade level) allots to all four activities combined. For example, High Use teachers in grade two give an average of 100 minutes daily to all four activities combined. Of this 51 minutes, or 51 percent, is allotted to formal reading instruction.

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insert TABLE XXXIII and TABLE XXXIV here

As Table XXXIII reveals, High Use teachers average substantially more daily time (11 to 19 minutes) in formal reading instruction in grades two through four than do Low Use teachers. They maintain a lead over Low Use teachers in this category through sixth grade. Low Users begin to approach High Users in reading instruction time in the fifth and sixth grades.

Story time, with the teacher reading aloud, occurs for second and third grade High Use students, but not for Low Users in these grades. Low Users begin to average about 15 minutes daily in fourth grade. At the same time, High Use teachers indicate a decline in reading aloud to their students. This decline is reflected in an overall decrease in time the High Users give to all four activities combined in fourth through sixth grade.

The general situation is reversed for the more independent activities of viewing movies, filmstrips, and video tapes, and of independent reading. In these categories, Low Use teachers average more daily time than do High Use teachers. In the amount of time they provide for independent reading, Low Use teachers lead until sixth grade when a decline brings the time to the same as that given by High Use teachers.

In providing time for movies, filmstrips, and similar language-related activities, Low Use teachers maintain a substantial lead

TABLE XXXIII

Average Daily Minutes Allotted to Major Reading/Language Activities

Grade:	Two	Three	Four	Five	Six
Reading Instruction					
High Users	51	43	53	49	53
Low Users	32	32	38	47	47
Teacher Reading Aloud					
High Users	20	18	6	6	6
Low Users	0	0	16	15	15
Independent Reading					
High Users	19	21	12	12	12
Low Users	24	27	15	14	12
Movies, Filmstrips, Etc.					
High Users	10	9	7	7	7
Low Users	18	16	12	14	10
Total: Average Time Daily for All Four Activities					
High Users	100	91	78	74	78
Low Users	74	75	81	90	84

TABLE XXXIV

Percentage of Average Daily Time Allotted
to Major Reading/Language Activities

Grade:	Two	Three	Four	Five	Six
Reading Instruction					
High Users	51%	48	68	66	68
Low Users	43	43	47	52	56
Teacher Reading Aloud					
High Users	20%	20	8	8	8
Low Users	0	0	20	17	18
Independent Reading					
High Users	19%	23	15	16	15
Low Users	32	36	19	16	14
Movies, Filmstrips, Etc.					
High Users	10%	10	9	9	9
Low Users	24	21	15	16	12
Average Actual Minutes for All Four Activities (100%)					
High Users	100	90	78	74	78
Low Users	74	75	81	90	85

over High Use teachers at all five grade levels.

Taking the total average time given to all four activities for each grade level of High and Low Users as 100 percent, High Use teachers surpass Low Use teachers substantially in reading instruction and in reading aloud to students. High Use teachers spend from 66 to 76 percent of the time allotted for all four activities in reading instruction and reading aloud. They give the remaining one-fourth to one-third of the time to the more independent activities.

Low Use teachers of second and third graders give less than half of their total time for all reading/language activities to reading instruction and reading aloud. In these grades the majority of reading/language time goes to independent reading and movies, filmstrips, and similar activities. Among Low Use teachers, a greater focus on reading instruction and reading aloud occurs later, in fourth through sixth grades.

The times calculated for each grade level in each of the twelve study schools for reading instruction and independent reading were also used in another analysis. In this analysis, the three best predictors of amount of Library Use were sought. Entered in the analysis along with reading instruction time and independent reading time were the teachers' planning scores. These scores, it was pointed out, are a composite of (i) the time a teacher recorded for planning instruction and (ii) the priority rating a teacher gave to specific planning of instruction. The fourth factor used in this analysis was the teacher's length of professional service in teaching. Results are presented in Table XXXV, Set A. In order, the best three predictors of the four are (i) teacher attitude toward and time given to instructional planning, (ii) the average amount of time daily the teacher gives to reading instruction, and (iii) the teacher's length of professional service. The amount of time given to independent reading was not selected by the computer operations as an important contributor.

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insert TABLE XXXV here

A second set of predictors was then entered, to find out which would be selected as the three best predictors of Library Use. Independent reading time and reading instruction time were used again, this time with the cloze reading comprehension scores averaged for each grade level in each school, and with the readability scores of the different cloze passages corresponding to the test scores. Results are presented in Table XXXV, Set B.

In this second analysis, the best predictors are, in order, (i) the cloze reading comprehension scores, (ii) average daily reading instruction time, and (iii) the readability levels of the cloze passages. Again, independent reading time was excluded.

In a third analysis, the effort was made to seek the three best predictors of the cloze reading comprehension scores. Entered as potential predictors were Library Use, daily independent reading time, reading instruction time, and readability levels of the cloze passages. While Library Use was selected as the best predictor of the reading comprehension scores, average daily reading instruction time was again selected as second. The readability level of the cloze passages

TABLE XXXV

Best Predictors of Library Use, Sets A and B

Variables Set A	Amount of Variance Contributed (R^2)	F-ratio for Total Variance	p	Beta Weights	F-Ratio for Beta Weights	p
1. Teacher attitude toward and time given to planning instruction	15%			.93703	15.27	$< .01$
2. Average daily reading instruction time	9			.05942	10.95	$< .01$
3. Teacher length of experience	6			-.20891	4.41	$< .01$
Total	30%	7.71	$< .01$			

(n= 60)

continued

TABLE XXXV, continued

Variables Set B						
1. Cloze reading comprehension scores	15%			.55059	25.17	<.01
2. Average daily reading instruction time	2			.02397	5.15	<.01
3. Readability level of cloze stories	1			.15180	.07	>.05
Total	18%	12.60	<.01			
(n= 180)						

was selected as third, with independent reading time excluded.

insert TABLE XXXVI here

Generally, only a moderate amount of the variance of the dependent variable, the variable for which the best predictors were sought, is accounted for in the three analyses, indicating that factors are at work other than those selected as potential predictors. However, the amount of variance accounted for totally in each of the analyses is statistically significant ($p < .01$). The variance figures reported are the adjusted R^2s, automatically accommodated to the number of cases. The beta figures, all statistically significant ($p < .01$) with the exception of readability in one analysis, are the unstandardized regression weights, indicating the contribution of each predictor variable to the linear prediction equation.

Thus, the null hypotheses can be rejected for all variables except readability. This is not so surprising, given that readability measures have an intimate relationship with reading comprehension, specific reading background knowledge, and other factors, as discussed in Section II, Chapter IV. (Klare 1963) An interaction relationship, rather than a strict linear relationship, is also suspected for certain of the other variables, as well. For example, the amount of time given to reading instruction as compared to other reading/language activities may not be as important for upper grade High Users as for upper grade Low Users who may have had less reading instruction time in second and third grade.

TABLE XXXVI

Three Best Predictors of Cloze Reading Comprehension Scores

Variables	Amount of Variance Contributed (R^2)	F-ratio for Total Variance	p	Beta Weights	F-ratio for Beta Weights	p
1. Library Use	15%			.22721	25.17	<.01
2. Average daily reading instruction time	2			.01422	4.38	<.01
3. Readability level of cloze stories	1			.37940	1.00	>.05
Total	18	12.55	<.01			

(n= 180)

Discussion

The most anomalous situation evident is in the second and third grade classrooms of Low Library Users. Here, the Low Users surpass the second and third grade High Users in amount of independent reading time, yet have far less reading instruction time to prepare students for beneficial use of independent reading time.

This situation is corroborated by responses of teachers to Item 10 of the Library/Media Use Questionnaire. (Table V, Chapter III) The lowest 27 percent of teachers in High Use and Low Use schools agreed more strongly with the item ("Materials are used mostly for students' independent time") than did the highest 27 percent.

This feature of the results, the relatively greater amount of time given in Low Use than in High Use classrooms to the less-guided activities (independent reading and viewing of filmstrips, movies, etc.), appears to be closely related to the error analysis results in Section III B, Chapter IV.

It seems evident that the High Use students' general enthusiasm for independent reading as revealed in the Reading Preference Questionnaire, (see Section V, Chapter IV) is well-founded, insofar as they are probably better prepared for the activity by the time they reach the fourth grade than are Low Users. High Use teachers of second and third graders appear to be more judicious than Low Use teachers in their division of time for the four reading and language activities reviewed here. This observation is based on the High Use teachers' comparatively greater allotment of time for guided reading instruction and reading aloud than for the other types of reading/language activities.

While time is admittedly an umbrella factor which does not reveal anything of the actual instructional details, it is the most economical approach to a closer look at the relationships at work in the children's reading comprehension scores, Library Use, language proficiency, and attitudes toward independent reading. The High Users have generally scored higher than the Low Users in all of these categories on measures taken for this report. They are also the children whose teachers give them more teacher-guided time in reading activities in the early grades. This start in reading evidently serves them well enough so that they continue to outperform the Low Users, on a number of measures analyzed in this report, even in the upper grades when their reading/language time decreases. They are particularly enthusiastic about independent reading compared to the Low Users (Section V, Chapter IV), many agreeing that it is what they "like to do most", while many Low Users find the activity only "fun sometimes."

The intimate relationship between the instructional reading time made available daily to the children, Library Use, and reading comprehension, is evident in the prediction analyses. Direct causal relationships cannot be inferred, but reading instruction time is evidently a more important predictor than independent reading in all analyses. Independent reading time is obviously not a good predictor of either Library Use or reading comprehension. This may be the case because independent reading time is over-allotted prematurely in the Low Use classrooms without a great enough focus on instructional reading time and teacher reading aloud time. During both kinds of activities teachers can provide help, information and evaluation, directly related to the reading and listening activities. The viewing activities (movies, filmstrips, etc.) are less amenable to interruption for immediate questions and pertinent instruction. Independent reading time is, of course, whatever a teacher wishes to make it. It may be an important period for teachers of multi-grade level classrooms, as an attention-holder while the teacher works with other children. From the results reviewed so far, however, independent reading periods need to be carefully evaluated, and probably improved with measures which help the teacher track the child's progress and which help the child track his own progress.

Teacher attitude toward, and time given to, instructional planning is an important predictor of Library Use. It seems that teachers who value and pursue specific planning for learning activities also are the ones who plan in advance enough to have Library/Media Center orders ready to send back with the mail pilot from the remote schools to the Bethel Center.

The close and important relationship between reading comprehension and Library Use is evident in two of the prediction analyses (Table XXXV and Table XXXVI). They are the best predictors of one another. Since the Library/Media Center sends out monthly boxes of primary level books to primary teachers in all schools, and since the teachers are responsible for most of the ordering that takes place aside from these boxes of books, the relationship seems to be mutually enhancing. However, with the High Use teachers surpassing the Low Users both in numbers of library orders and in amount of reading instruction and reading aloud time, the teachers' skills and values, with respect to teaching reading, reading aloud, and planning instruction, seem to be at the heart of the matter.

Summary and conclusions

Teachers in High Use schools give substantially more time to guided reading/language activity than do teachers in Low Use schools, particularly in the second and third grades. This time in guided activity is a better predictor of both Library Use and cloze reading comprehension scores than is time given to independent reading.

Teachers' attitudes toward, and time given to, instructional planning is an important predictor of Library Use. Also a strong predictor of Library Use are students cloze reading comprehension scores.

Library Use also figures importantly in the students' reading comprehension scores.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. Summary and Conclusions

This evaluation has focused on two major objectives. The first objective was to examine the Bethel Regional Library/Media Center as an exemplary resource for several thousand Eskimo children of Southwestern Alaska and their teachers. The second objective was to assess the impact of the Library/Media Center on the learning outcomes of these children in several areas: reading, language, and overall academic achievement.

The Library/Media Center as an exemplary resource

Compared to national standards. In comparison with national standards for library/media centers, the Bethel Regional Library/Media Center excells in several respects.

Most outstanding are (i) the delivery system, (ii) purchasing, and (iii) the basic collection available in the Center. The delivery system developed by the Director for getting thousands of library and media items to 32 remote village schools annually is a notable achievement. A substantial majority of teachers who place orders report that they and their students usually receive materials within one week of ordering. This efficiency is no small achievement when one considers the severe weather, distance, and transportation constraints under which the system operates.

Intimately related to the high quality of the delivery and access system is the purchasing plan implemented by the Director. By national standards, this purchasing system also is judged to be superior for the special circumstances of the Regional Library. The purchasing system is characterized by (i) complete updating annually, (ii) the highest quality materials, selected on the basis of American Library Association guidelines for elementary school collections, and (iii) complete and well-organized information in each village classroom as to the books and other materials comprising the current collection. These features have been achieved by the Director's decision to purchase the complete collection contained in the Bro-Dart Elementary School Library Collection Catalog. By having the complete collection available in the Regional Center, and by updating it annually, the Director has been able to place a current Bro-Dart catalog in each classroom with assurance to the users that they could count on receiving any order placed from the catalog. While some observers might view this approach as embodying possibly unnecessary expense (e.g., not all materials in the collection may be equally in demand), the alternative would detract substantially from the kind of service that users have been receiving. The alternative would involve the librarian's considerable devotion of time to making selections from the recommended collection every year, and to the preparation of a complete and well-organized catalog of comparable quality for use by all teachers and students. Just the clerical tasks alone of preparing such a catalog are presently beyond the staff size capabilities, to say nothing of the professional attention such an undertaking would require. In addition, the collection would then be that judged by the librarian alone to be most suitable, out of all the possible selections that could be made. While the present Director possesses the professional training to take on such a task, the time and training of clerical help that would be needed to accomplish it would subtract directly and substantially from the time currently used to accession materials and get them to the users as efficiently as possible. For Library/Media Center users as remote and as widely scattered as the Alaskan user population, a shorter overall period of availability of materials, a longer delivery time for orders which are placed, and a restricted range of resources could have serious effects upon the interests of the population in using the Center.

With the current plan in operation, circulation has steadily improved, meaning that ever-increasing use is being made of the resources now available.

While the current collection surpasses 1969 national standards in quantity, it is within about 25 percent of current (1975) standards of 40 items per pupil. Resources are substantial, but hardly extravagant, especially considering the educational needs of this population.

Next to having a complete, up-to-date quality collection and a library/media staff to run it in each village school, having the Bro-Dart catalog and its complete collection available from the Center seems to be the most practical and beneficial alternative for all concerned. It means that users, children and teachers alike, have the equivalent of a complete card catalog of a wide range of quality materials at their fingertips at all times.

In staffing, production, and facilities, the Regional Library/ Media Center falls short of national standards in terms of quantity, but not quality. Professional staff and sophisticated production capabilities are available in the Center, but staff is extremely limited in size for the kinds of services such a facility could render. Not only is para-professional help limited in number, but it is characterized by a high rate of turnover. This turnover is owing, for the most part, to home and family obligations of the native people employed. Such turnover, of course, requires the two professional staff members, the Director/librarian and the media specialist, to devote fairly regular amounts of time to training new assistants, in addition to all of their regular work load. The staffing is at best a third of what is needed, according to national standards.

Facilities are crowded, with some library operations taking place even in the hallway. Should staff size increase, additional space would definitely be needed.

Teacher perceptions of quality. Teacher perceptions of the quality of Library/Media Center resources and services lend strong support to the judgement of (i) overall excellence of the resources and services, and (ii) the educational need for such a Regional Center as has been established and implemented by the Director. Local collections in village schools are seen as far less desirable for many reasons.

School staff members' responses to a questionnaire reflect general enthusiasm and admiration for the Regional Center. The delivery and access system is one of the features they perceive as outstanding.

Both the quality and the appropriateness of the Center's materials also receive high teacher ratings. Highly positive responses are given to such items as (i) the teachers' dependence upon the Center for certain basic curriculum resources, (ii) the students' broadened perspectives about the world, (iii) student satisfaction with materials they order, (iv) better teaching effectiveness as a result of having the Center available, and (v) the high quality and variety of materials available.

While many teachers acknowledge that they frequently use the library/media materials for student free time, they respond even more positively that the resources are important to basic curriculum planning.

The teachers are strongly united in positive questionnaire responses regarding the benefits of the Center's materials to their students' improvement in some reading skills and in social studies, as well as to the students' greater participation in independent reading. A number of teachers volunteer science as a subject which is served especially well by the library/media resources.

The teachers' responses are divided, some strongly positive, some less positive, and some negative, with respect to the value of the resources for the subjects of math, art, library skills, reading comprehension, and reading interests. (As becomes apparent with further analysis involving the students' test performance, Library Use appears to be an important factor in both reading comprehension and reading interests among High Library Users.)

The impact the Regional Center has on the villages in which the schools are located is a matter on which teachers are also divided. In some cases, teachers observe that parents are reading at home with their children and are buying books for their children to an ever greater extent, as a result of the influence of the Regional Center. In other cases, teachers do not agree that such a noticeable change has taken place in the home life of the children. This difference in opinion probably reflects a difference in individual school policy concerning library materials, and in how Center resources are used in the classrooms.

When given an opportunity to recommend improvements for the Regional Library system, responses to the questionnaire indicate that most respondents do not perceive that any improvements are necessary. Rather, they agree that library services and resources are of top quality, equal to any they have seen before.

In general, the percentage of positive responses to the Regional Center exceeds that of positive responses by teachers to an exemplary library studied in a major library evaluation effort, described in the Knapp report. (Sullivan, 1968)

Conclusions. The Bethel Regional Library/Media Center can be generally evaluated as an exemplary resource and service, given the unique circumstances and special audience being served. It could well serve as a model for other remote areas with similar educational needs. An important key to its success obviously lies in the quality and dedication of the professional staff.

Improvements in the areas of staff size and space for facilities would bring the Regional Center into closer alignment with national standards, and would increase the potential for benefits to the student population.

The impact of Library/Media Center resources on student learning outcomes

Reading. Students in second through sixth grade in 12 sample schools were categorized as High Library Users and Low Library Users, on the basis of average annual per-pupil orders placed with the Regional Center.

The reading comprehension of these students was tested using cloze tests comprised of passages from uncirculated library books. On the cloze tests of reading comprehension, High Library Users scored significantly higher than Low Library Users at every grade level from two through six. High Users' scores were generally two to three times higher than those of Low Users.

Few of the students achieved scores indicative of either the independent reading level or instructional reading level, as these are traditionally defined, on cloze passages at the readability levels for the grades in which the students were enrolled. While both language and dialect differences may be partially responsible for this situation, children who are Eskimo-dominant in language and are also High Library Users outperform Eskimo-dominant children who are Low Library Users. Thus, factors other than language, such as knowledge of the world (the network of meanings the reader brings to the task of reading), and certain curricular variables probably share in responsibility for these overall reading comprehension performance differences. The extensive resources of the Library/Media Center can be invaluable in helping to overcome this situation. Not only through books, but also through video taped lessons, filmstrips, movies and curriculum kits, the children can gain information about Alaska and the world beyond.

The cultural orientation (Alaskan or non-Alaskan) of cloze passage content appears to make little difference in students' reading comprehension scores. More important to student performance are the readability levels of the reading materials. The higher scores of both High and Low User students occurred on the same types of content within each grade level tested. Lower scores for both groups at every grade level appear to correspond to the more difficult cloze passages, in terms of the readability levels of the passages. The Bro-Dart catalog classifies the items it contains by readability level. It is evidently very important for teachers to use this information to guide student selections, so that these children will be able to enjoy and benefit from the materials they order.

Another important feature of the students' cloze test performance is that High Users attempted to fill in many more blanks than did Low Users. Low Users averaged about twice as many blanks left empty as High Users, in a random sample of all five grade levels, two through six. This characteristic of High Users may be taken as an indication of confidence, of willingness to try even though correctness is not assured. As good risk-takers, High Users apparently achieved many more right answers in their cloze tests than did Low Users. In the long run, this characteristic should continue to bring the High Users many more "wins" than Low Users will achieve if they continue as poorer risk-takers.

When questioned about reading preferences the High Users and Low Users demonstrate several notable differences. They also exhibit some important similarities. In terms of the numbers of topics they exhibit interest in, the High Users score significantly higher than the Low Users in fourth and fifth grade, and also higher in sixth grade. However, in terms of the kinds of topics most-preferred and least-preferred, High and Low Users are much more alike than different. Compared to American children of their own age and grade level, the Alaskan children of both groups exhibit more similarities than differences on the matter of the kinds of stories they like to read.

Apparently, given more exposure to library/media materials the High Users develop a greater breadth of interests, as well as more proficiency in reading. The kinship in terms of reading interests that High and Low Users share with each other, as well as with American children in general lends support to the Library/Media Center's approach of making a wide variety of high quality materials available to the Alaskan children.

One other difference exhibited between High and Low Users is in their attitudes toward independent reading. Many more High Users than Low Users claim to like independent reading as a favorite activity. Low Users more often agree that independent reading is "fun sometimes." Among both groups, students who don't agree that independent reading is a favorite activity or at least fun sometimes, for the most part, do agree that it is "good for me."

A vast majority of both High and Low Users in fourth, fifth, and sixth grade agree that they like to listen to stories their teachers read aloud to them. A much smaller percentage agrees that teachers read aloud daily. Story time by the teacher seems more often to be a weekly event. Among benefits students could derive from a daily story time are increased familiarity with (i) the sound system, (ii) the structure, and (iii) the meanings, of English, as well as with information about the world.

The differences in numbers of reading preferences selected by High and Low Users do not appear to have a direct relationship with their reading comprehension scores. Rather, the difference seems to lie in the amount of reading the children do.

In general, the children of both groups are characterized by positive attitudes toward reading and being read aloud to, a gratifying finding in light of the relatively low overall reading comprehension scores.

Language. Along with standard (exact word) scoring of the cloze tests, several kinds of analyses were made of the students' errors in filling in the cloze test blanks.

When language dominance was considered, High User Eskimo-dominant students in grades two through six made errors similar in type to those made by English-dominant students, errors which are typical of native speakers of English in general. In contrast, Low Library Users who are Eskimo-dominant in language made errors which are more typical of those made by nonnative speakers of English. The role of the Library/Media Center as a provider of implicit language information is suggested with these findings.

When students' cloze test mistakes were analyzed for their appropriateness in (i) part of speech, and (ii) meaning, High Library Users also scored significantly higher than Low Library Users in grades two through six. While both groups showed about the same percentage of improvement from second to sixth grade, the High Users began with a higher percentage of appropriate errors in second grade, both in syntax (language structure) and in semantics (meaning). In analyzing the pattern of improvement in making "good" mistakes from second to sixth grade, it is evident that High User teachers provide substantially more reading instruction time and more time for reading stories aloud to their students than do Low User teachers. Low User teachers, particularly in the primary grades, average more time in less-guided reading and language-related activities such as independent reading time, movies, filmstrips, and video tapes. The High User teachers' use of reading and language instruction time appears to correspond to higher scores for their students in making "good" mistakes when compared to the Low User students' errors. Low Library students show improvement in the kinds of mistakes they make when there is a corresponding increase in the amount of time their teachers give to reading instruction and to reading stories to the students.

In the classrooms of High Library Users, there is evidently a much stronger focus of attention on reading instruction as well as on reading stories aloud to the children. The contrast between High and Low User classrooms is particularly strong in the second and third grades, during which time High User students gain their advantage over Low Users in making much more appropriate mistakes on their cloze tests.

These findings suggest that not only might Low Library User teachers take more advantage of Library/Media Center resources, but they should also seriously consider giving a greater proportion of time to reading instruction and to reading aloud to the children. This combination has evidently worked well for High Users.

An area in which no notable differences appeared between High and Low Library Users is that of the frequency ranks of the words they chose to fill in their cloze test blanks. The students, whether Eskimo- or English-dominant in language, and whether High or Low Users, exhibited a pattern like that of native English speakers in general. That is, they chose the vast majority of their words (86 to 90 percent) from the highest frequency ranks of English words. This analysis was based on a computer-assembled analysis of English word frequencies of over 80,000 words. (Carroll, et al, 1971) This finding indicates that the Alaskan children, whether dominant in English or learners of English as a second language, are very much alike in their sensitivities to the frequencies of occurrence of English words. It also suggests that the collection of library materials, in which careful attention is given to readability levels, is as appropriate for the Alaskan children as for American English-speaking children anywhere.

Academic achievement. For students in all 32 schools, academic achievement as measured by the *Metropolitan Achievement Test* appears to have improved from the year in which the Library/Media Center began (1971-72) to the 1974-75 school year. The improvements are statistically significant in most cases, and are greatest in the language subtest, with the reading subtest following. There are also improvements reflected in the battery total scores over the four-year period.

While it cannot be assumed that Library/Media resources are solely responsible, the availability of these resources can be safely assumed to have played an important role, particularly in those classrooms where Library Use is high.

Predictors of Library Use and reading comprehension. In the matter of what classroom variables seem to have an important relationship with Library Use, three factors stand out. First, the students' cloze reading comprehension scores predict 15 percent of the variance in Library Use figures. In addition, the amount of time a teacher gives to specific lesson planning combined with the teacher's attitude toward specific lesson planning is an important predictor of Library Use. Along with these variables, the amount of time a teacher gives to reading instruction in the classroom is a noteworthy predictor of Library Use. In contrast, the amount of independent reading time a teacher provides is not a good predictor of Library Use, nor is it a good predictor of the students' cloze reading comprehension scores. Library Use is the major variable found in this study to predict reading comprehension scores, with the amount of time teachers give to reading instruction also an important variable.

Certain findings about how teachers divide their time for various reading and language activities help explain some of the relationships between Library Use and reading comprehension scores.

Information from a questionnaire to which teachers responded was analyzed in terms of the amount of time teachers give to four main reading/language activities: reading instruction, reading aloud to the children, independent reading by the children, and language-related activity (e.g., movies, filmstrips).

High Library Use second and third grade classrooms receive about twice as much reading instruction and teacher reading aloud time as Low Library Use classrooms. Low Use teachers appear to surpass High Use teachers, especially in the second and third grade, in giving their students independent reading time and other less-guided language-related activity. The anomaly is that Low Use students in these grades do not seem to be prepared to benefit very much from independent reading time. Rather, they appear to need guided instruction in reading, and probably close teacher guidance (explanation and discussion) when taking part in such activities as viewing filmstrips, movies, and video tapes.

Generally, the patterns of how High and Low Use teachers divide their total time for reading/language activities throughout grades two through six correspond quite closely to the students' patterns in making semantic and syntactic mistakes on their cloze tests. The better, or more appropriate, errors seem to correspond to a greater amount of reading instruction and teacher reading aloud time.

In addition, the view teachers have toward specific lesson planning as well as the average amount of time they devote to this activity seems to be important to Library Use, and thus, to student learning outcomes. Ordering materials from the Regional Library requires some advance planning, if the materials are to be incorporated into the curricular experiences which teachers plan for their students. If the materials are to enrich a particular learning experience, or are to be basic to a classroom learning event, teachers must think through plans for these experiences from a week to two weeks in advance. Teachers who do not value such planning or who do not give much time to it still order library materials, but the value of the resources to specific learning outcomes is not nearly so sure a matter as in classrooms where specific advance planning is highly valued. More than likely, it is in these classrooms that library/media resources provide mainly for enjoyable free time activities for students. While some benefit is probably accrued to the students' learning, it is apparently in the classrooms of careful teacher-planners that the most benefits are gained.

Conclusions. It is clear, both from teachers' perceptions of the quality of the Regional Library/Media Center resources, and from measures of student learning outcomes, that the Regional Library/Media Center plays an important educational role in many classrooms in the Bethel Agency. It is also evident that its role could be qualitatively strengthened in other classrooms to the educational advantage of the students.

More than any other single resource available to all the children in this region of Alaska, the Library/Media Center can offer extensive high quality resources in a variety of modes, from books to videotaped lessons in many subject areas.

In those schools where the resources have been well-exploited, the students have obviously benefited. The teachers who plan and implement curricular integration of the library/media materials have made it clear that the Regional Center is an invaluable resource.

II. Recommendations

The recommendations made in this section are offered with the expectation that they will result in educational benefit to the Alaskan children of the Bethel Agency if implemented. The recommendations are in two main categories, one focusing on maintenance of certain features of the Regional Library, and the other on improvements that might be made. The responsibilities for maintenance and for improvements are divided among Bethel Agency education administrators, Regional Library personnel, and the personnel staffing the village schools.

1. The basic purchasing and delivery systems should be maintained as they have been established and implemented by the Regional Library Director. These systems have made possible the efficient and thorough distribution of thousands of valuable resources throughout 32 widely scattered and remote schools.

2. The high standards of professionalism should be maintained through the continued employment of a professional librarian and a professional media specialist, to direct the operation of the Regional

Library. Dedication, imagination and sensitivity to the special audience being served are obvious qualities needed along with specific library/media knowledge.

3. Additional staff should be employed, both in the form of professional assistants for the librarian and media specialist, and in the form of para-professional employees. The sophisticated capabilities of the media production part of the Center's operation should be put to greater use than is now possible to help meet the special educational needs of this isolated population, but without additional assistance the production potential cannot be attained. Additional staff is also needed in the library part of the operation, so that the professional staff has time for much-needed visits to the village schools. Visits are important for developing personal acquaintance with school staff, for introduction of new materials, for assisting directly with curriculum planning, and for demonstration of catalog-ordering details for the students, among other tasks.

4. Training of new village school personnel, should be a high priority, along with on-going in-service training. In lieu of personal visits to the schools, preparation of a video tape series should be made to acquaint teachers and students with the procedures required to gain access to and effectively utilize the resources of the Library/Media Center.

5. In addition, the librarian should consider making storytelling or story-reading video tapes which exemplify the techniques of these activities as skilled librarians are taught them in their professional training. Such materials could serve not only to help

teachers who have several different groups of children to manage in one classroom, but could also serve to demonstrate such techniques for teachers who want to improve their skills in story-reading and story-telling.

6. Among special video tape programs, language lessons should be considered for development by the media operation. These could be teacher training programs for helping children learn a second language, and also reading and listening lessons using library materials to accompany specific curriculum programs.

7. Trips by village students to the Regional Center should be implemented, to bring to life the array of resources available to them through their classroom catalogs. The effects of one such visit by students were profound, according to school personnel.

8. Education specialists at the Bethel Agency should work closely with the Center staff in helping teachers become aware of the many curriculum resources available in the Center's collection. Together with Center personnel, they could make and implement plans to help teachers incorporate library/media resources into their basic classroom programs to an increasing extent.

9. Information about the Regional Library/Media Center's operation should be made available to other educational agencies which may be attempting to serve similar needs. Dissemination of information might be accomplished through a brochure, movie, or video tape.

10. Materials now available in the Regional Library Center which are not listed in the Bro-Dart catalog should be catalogued for

dissemination to teachers in the village schools. Numerous videotaped lessons in specific curriculum areas, as well as realia (e.g., musical instruments), would thus be more accessible for classroom use.

11. Teachers who are currently devoting relatively small amounts of daily time to reading instruction need to reconsider their long-range goals for their students. Reading proficiency is a key to proficiency in many other subject areas, and deserves greater attention in some classrooms than it is currently getting. Possibly, too, broader perspectives on teaching reading are needed. References to Smith and Goodman have been made throughout this report. Both would be important resources for teachers whose current and basic focus in teaching beginning reading relies on "sound-symbol correspondences." Children can bring several other major resources to the task of beginning reading, resources which are equally as valuable as their knowledge of the sound system, and perhaps even more important. The professional references mentioned above provide clear insights into this matter.

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APPENDIX A

Cloze Test

Michael was sitting on his mother's lap.

Back and forth, back and forth, they rocked.

"Let's get Dolly," said Michael.

Soon Michael and Dolly were on ________________ lap.
1

Back and forth, back and ________________, they rocked.
2

"Boat needs me," said ________________. "I'll bring Boat.
3

Michael climbed back ________________ Mother's lap with Boat on
4

one ________________ and Dolly on the other.
5

Back ________________ forth, back and forth, they rocked.
6

"________________ want my reindeer blanket," said Michael.
7

________________ , Michael tucked his reindeer blanket around
8

________________ and Dolly.
9

Back and forth, they ________________ rocked on Mother's lap.
10

"Puppy wants ________________ come too," said Michael.
11

Michael and ________________ and Dolly and Puppy all cuddled
12

________________ the reindeer blanket on Mother's lap.
13

2-1
3-1 e

______________ and forth, back and forth, they ______________.
14 15

"I hear Baby crying," said Mother.

" ______________ like to rock, too."
16

"There isn't ______________," said Michael.
17

"Let's see," said Mother.

______________ and Baby both snuggled close to ______________.
18 19

Boat and Dolly and Puppy were ______________ Michael's arms,
20

the reindeer blanket wrapped ______________ them all.
21

Back and forth, back ______________ forth, they rocked.
22

"It feels good," ______________ Michael.
23

His mother gave him a ______________. "You know, it's a funny thing,
24

______________ whispered, but there is always room on Mother's lap."
25

THE END

2-1
3-1 e

Cloze Test
Answer Sheet

1. Mother's
2. forth
3. Michael
4. on
5. side
6. and
7. I
8. carefully
9. Boat
10. all
11. to
12. Boat
13. beneath
14. Back
15. rocked
16. She'd
17. room
18. Michael
19. Mother
20. in
21. around
22. and
23. said
24. squeeze
25. she

BACKGROUND INFORMATION
BETHEL AGENCY TEACHERS
SPRING, 1975

School: ____________________

A. Teacher Background

1. Length of service overall (Check one)

   1-2 yrs. ____ 3-4 yrs. ____ 5-9 yrs. ____ 10-14 yrs. ____ 15 + yrs. ____

2. Length of service in Bethel Agency (Check one)

   1-2 yrs. ____ 3-4 yrs. ____ 5-9 yrs. ____ 10-14 yrs. ____ 15 + yrs. ____

3. Length of service at this school

   1 yr. ____ 2-4 yrs. ____ 5 + yrs. ____

4. Grades you are now teaching (Circle)

   K 1 2 3 4 5 6 7 8 9

5. Number of students in your class(es). (Write the grade(s) in appropriate blanks.)

   less than 10 ____ 10-15 ____ 16-20 ____ 21-30 ____ More than 30 ____

B. Classroom Program

1. Approximate daily class schedule (e.g. today's). Adjust times as necessary to provide a general idea.

8:00 a.m. ____________

____

8:30 a.m. ____________

____

9:00 a.m. ____________

____

9:30 a.m. ____________

____

10:00 a.m. ____________

____

10:30 a.m. ____________

____

11:00 a.m. ____________

11:30 a.m. ____________

____

1:00 p.m. ____________

1:30 p.m. ____________

2:00 p.m. ____________

2:30 p.m. ____________

3:00 p.m. ____________

3:30 p.m. ____________

2. Check subjects taught (or regularly teacher guided) (daily or weekly) in your classroom.

	(Check one)		Minutes		
	Daily	Weekly	15-30	30-60	60+
Science					
Math (Arithmetic)					
Social Studies					
Music					
Reading					
Language (Composition, mechanics, oral, etc.)					
English					
Art					
P.E. and/or Health					
Student Independent Time					
Other (e.g. Story time, movie or filmstrip time, etc.) Specify					

3. Use of student independent time: (General, approximate)

Daily	Weekly	Activity	Time		
			15-30	30-60	60+
		a. Drawing or other art or craft activity.			
		b. Conversation			
		c. Games (e.g. checkers)			
		d. Reading for enjoyment			
		e. Research (independent projects)			
		f. Other (Specify)			

B. Textbooks or curriculum series used: Grade level and Publisher series

Reading ____

Science ____

Math ____

Social Studies ____

Language ____

Health ____

Other ____

C. Teacher Preparation: Professional Maintenance

1. Check the approximate time you spend in planning your program.

   Daily: 1 hr. _____ 2 hrs. _____ 3 hrs. _____ 4+ _____

   Weekly: 1-3 hrs. _____ 4-7 hrs. _____ 8-10 hrs. _____ More than 10 _____

2. Available planning time is:

   Ample _____ Minimal _____

   Adequate _____ Inadequate _____

3. Please rate the following planning and preparing activities in terms of their priority for available time. Scale: 1 2 3 4 5
   1 = Highest 5 = Lowest

   _____ Preparing or arranging classroom and materials

   _____ Locating materials and supplies in building

   _____ Ordering teaching aids (supplies, movies, books, etc.)

   _____ Evaluating student work, recording grades

   _____ Specific lesson planning

   _____ Other (Specify please)

4. Assistance for the teacher: Please rate each of the following in terms of its helpfulness to you this year in planning and carrying out your instructional program. Scale: 1 2 3 4 5
1 = Most helpful 5 = Not helpful

_____ Administrator

_____ Other teachers in the building

_____ Teacher aide

_____ Secretary

_____ Parents who volunteer

_____ Professional journals or magazines

_____ Library/media resources and services

_____ Student helpers

_____ Other

D. The atmosphere at my school is generally: (Check one or more)

1. Exciting _____
2. Dynamic _____
3. Creative _____
4. Pleasant _____
5. Easy going _____
6. Dull _____
7. Boring _____
8. Depressing _____

E. Language dominance of students: Teacher estimate for the class as a whole (Check one)

_____ 1. Monolingual Eskimo (little or no English)

_____ 2. Dominant Eskimo, minimal English

_____ 3. Balanced (about equal proficiency in Eskimo and English)

_____ 4. Dominant English, minimal Eskimo

_____ 5. Monolingual English (little or no Eskimo)

LEARNING RESEARCH ASSOCIATES
3304 Roma N. E.
Albuquerque, New Mexico 87106

QUESTIONNAIRE ON LIBRARY/MEDIA USE

Instructions:

Please respond frankly to each item and mail the completed questionnaire directly to us in the attached addressed envelope. We are the only ones who will see your response and comments but we don't need your name.

Thank you for your participation and assistance.

Grade Level(s) __________________________ School ______________________________

A. Delivery system - procedures for ordering and organizing materials.

1. To get materials from the Regional Library/Media Center in Bethel: (Check appropriate statements)

_____ a. I select and order most of what comes to my classroom.
_____ b. My students select from the catalogue, and I write the orders.
_____ c. I select on behalf of my students and have someone write the order: The aide _____ student helper(s) _____ a parent _____ other _____ specify ______________________________
_____ d. My students select and place their own orders.
_____ e. I select and order what I want and students select and order what they want.
_____ f. Other (or none of the above) Specify ______________________________

2. Orders are placed about once a week _____ About twice a month _____ About once a month _____ Less often _____.

3. Orders are usually received in less than five days _____ In about five days _____ Within seven days _____ Within two weeks _____.

To answer the next seven items please use the following scale: 1 = Strongly Agree (SA) 2 = Agree (A) 3 = Disagree (D) 4 = Strongly Disagree (SD)

_____ 4. Orders are usually filled accurately.
_____ 5. Materials available from the Center are appropriate for my class(es).
_____ 6. Improvement could be made in the ordering and delivery system.
Comment: ______________________________
_____ 7. It would be better to have a library collection within my school.
Comment: ______________________________
_____ 8. In general, selecting materials and placing orders is too time consuming.
_____ 9. In general, reiving and returning materials are problems.
_____ 10. In general, organizing materials in the room once they are received is a problem.

B. Content of orders

1. Please rank the following materials in order of quantity requested:

a. By you

____ Books
____ Filmstrip
____ Movies
____ Video Tapes

8 mm Film Loops ____
Recordings ____
Kits ____
Other (Specify) ____________

b. By your students

____ Books
____ Filmstrip
____ Movies
____ Video Tapes

8 mm Film Loops ____
Recordings ____
Kits ____
Other (Specify) ____________

Please use the scale 1 = SA 2 = A 3 = D 4 = SD for the following 4 items.

____ 2. Students are usually satisfied with the materials. I ____/they ____ (Check 1 or both) order once they receive them.
____ 3. A good variety of appropriate materials is available for selection.
____ 4. Materials from the Center are used mainly for students' independent time.
____ 5. Students are capable of using the catalogue and ordering appropriate materials for themselves.

C. Use of materials (Please use the scale 1 = SA 2 = A 3 = D 4 = SD)

____ 1. The library/media services are helpful to me in basic curriculum planning for various subjects I teach.
Comment: ____________

____ 2. In frequently order and use professional literature from the Center.
Comment: ____________

____ 3. Library/Media Center materials help me provide enjoyable free time activity for my students. Comment: ____________

____ 4. I benefit in many ways as a teacher from use of the Library/Media Center. Comment: ____________

5. Please rate the following subjects in terms of benefit to your students from incorporation of Library/Media Center materials.
Scale: 1 = Great Benefit 2 = Some Benefit 3 = Little Benefit 4 = No Benefit

____ Music
____ Responsibility for property
____ Library Skills
____ Independent Reading

____ Reading (Teacher-guided)
____ Social Studies
____ Math
____ Art
Other: ____________

6. In my room caring for library materials is mainly the responsibility of: (Check one)

____ Individual students who order them.
____ I organize them in a central location.
____ A student librarian
____ Aide organizes materials and looks after it.
____ Other

D. Outcomes (Use the scale 1 = SA 2 = A 3 = D 4 = SD)

____ 1. My students are more frequent independent readers as a result of having the Regional Library services available.

____ 2. My students comprehend better what they read as a result of being able to select from a variety of materials.

____ 3. I have observed specific improvements in my students' interest in reading since the Regional Library services have been available.
Comment: ____

____ 4. I have observed specific improvements in my students' reading ability as a result of using materials from the Regional library.
Comment: ____

____ 5. Library mater[illegible] are generally "over the students heads" in terms of language. Comment: ____

____ 6. Library materials are generally "over the students' heads" in terms of content. Comment: ____

____ 7. Materials received from the library have generally broadened my students' perspective about the world. Comment: ____

____

____ 8. Library/Media materials have helped me design a better curriculum for my students. Comment: ____

____ 9. I am a more effective teacher as a direct result of having the Regional Library/Media services available. Comment: ____

____

____ 10. I have altered my class schedule to accommodate ordering and using materials from the Center. Comment: ____

____ 11. Having our own school library collection would not noticeable affect the way I plan my program. Comment: ____

____ 12. My students would benefit just as much from my program if we had our own school library collection. Comment: ____

____

E. Perceived impact on the village (Use the scale 1 = SA 2 = A 3 = D 4 = SD)

____ 1. I have observed a definite increase in reading at home on the part of my students. Comment: ____

____ 2. Some village parents are reading with their children from library books they take home. Comment: ____

____ 3. Quite a few parents are requesting materials from the library.
Comment: ____

____ 4. A number of parents are buying books for their children or themselves.
Comment: ____

____ 5. A number of villages now have TV sets probably as a result of seeing it at school. Comment: ____

F. Recommended improvements

____ 1. Content of the materials should be made more appropriate.

____ 2. The language of library/media materials should be more appropriate for my students.

____ 3. Procedures for ordering and receiving of materials could be more efficient.

____ 4. A greater variety of materials appropriate for my students should be available. Specify: ____

____ 5. The Library/Media Center materials and services are of top quality equal to any I have seen.

APPENDIX B

1971-74 Library Circulation

Attached are tables indicating circulation figures and requests from the field for the three school years the Library has been in operation.

During 1973--74, 22% of the orders received had to be placed on reserve. This number indicates a deficiency still in materials and especially in duplicate copies. The figure to reach for would be no more than 10%.

The increase in requests between 1971/72 and 1972/73 totaled 1,166 or an increase of 27.5%; between 1972/73 and 1973/74 the increase totaled 2,735 or 51%.

As of September 25, 1974 a total of 2,828 orders have been received, this is already a 58% increase over the month of September 1973. This indicates a continued increase in demands for service. It also indicated a need to reassess the work-load of present staff and determine man-hours necessary to fill these requests.

Circulation increased 41% in FY73 over FY72; 31% in FY74 over FY73. The rate of growth may be slowing down, but it is still increasing rapidly enough to indicate a steady growth for at least two or three more years.

Increased requests and circulation have been handled by nearly the same staff (one position added in FY74) since summer work has been to complete processing of the collection. When the Library opened there was little material processed and it was necessary to process materials before shipping. This summer saw inventory completed in areas not previously cataloged. Experienced summer help made the difference between summer '73 and summer '74.

Inventory statistics:

	1972	1973	1974
Books (Volumes)	9,502	15,733	18,314
Filmstrips (including Sound Filmstrips)	1,083	3,323	3,771
Film Loops (Super 8mm)	102	748	895
Recordings (Records and tapes)			4,703
Study Prints			94
Transparencies			34
Kits			26
Games			13
Films			16
Video-tape programs			1,614
Realia			3
Slides			44
TOTAL	10,687	19,804	29,487

BETHEL AGENCY EDUCATION

LIBRARY/MEDIA CENTER

REQUESTS

1971/72	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTAL
TEACHER			77	466	247	799	734	291	99	64	2,777
STUDENT					167	236	235	441	305	79	1,463
											4,240
1972/73											
TEACHER		858	712	482	178	284	427	271	206	19	3,437
STUDENT		119	86	194	169	225	468	397	311		1,969
											5,406
1973/74											
TEACHER		1,535	451	873	189	842	347	397	143	1	4,911
STUDENT		248	356	204	345	563	403	653	480	21	3,230
											8,141
1974/75											
TEACHER	751	1,597									
STUDENT	45	563									

BETHEL REGIONAL LIBRARY

CIRCULATION STATISTICS 1971/72

	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	TOTAL
BOOKS	207	461	1,719	935	2,721	878	964	2,658	913	11,456
INTER-LIBRARY LOAN	15	2	6	2	2	2				29
FILMSTRIPS	48	82	38	149	118	159	186	243	272	1,295
SOUND FILMSTRIPS	18	26	36	71	59	92		94	152	548
8MM FILM LOOPS	7	42	17	41	45	57	9	54	102	374
AUDIO-TAPE	1	15	18	32	51	80	43	80	87	407
TRANSPARENCIES	9	16		8	9	72	2	23	59	198
CHARTS	15		2		22					39
SLIDES				72		107	48			227
STUDY PRINTS	16	1	1	1	32	64	8	43	26	197
KITS	1	4	11	2	5	5	3	4	11	46
PICTURES							8			8
REALIA	1				1			3	4	9
EQUIPMENT		1			9	2			8	20
FILMS							1	14	73	88
OTHER	21	213	213	587		161	9	2		993
VILLAGE						1,141	685	1,486	1,151	4,463
TOTAL	359	650	2,061	1,900	3,074	2,820	1,958	4,717	2,858	20,397

LIBRARY/MEDIA CENTER

CIRCULATION AND REQUESTS 1972/73

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTAL
BOOKS	2,352	484	3,797	2,147	3,060	1,014	731	491	104	14,180
INTER-LIBRARY	5				7					12
FILMSTRIPS	202	282	58	103	33	191	243	106		1,218
SOUND FILMSTRIPS	121	151	129	140	70	167	215	137		1,130
8MM FILM LOOPS	58	41	61	39	75	337	24	68	1	704
AUDIO-TAPE	69	41	37	82	31	34	92	94		480
TRANSPARENCIES	38	5	24							67
CHARTS		1			1	1	3			6
SLIDES							21			21
STUDY PRINTS		33		43	15	10	13			114
KITS	10	4	3	3	3	5	2	1	3	34
PICTURES	59	51	99	19			34	7		269
REALIA				10			1			11
EQUIPMENT	7	5	4	5	6	4	8	1		40
FILMS					8	10	6	10		34
VIDEO-TAPE	104	99	148	129	197	200	213	301	8	1,399
VILLAGE	19	342	1,235	1,095	2,137	644	1,156	1,183	1,242	9,053
TOTAL	3,044	1,539	5,595	3,815	5,643	2,617	2,762	2,399	1,358	28,772

LIBRARY/MEDIA CENTER
CIRCULATION STATISTICS 1973/74

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY-JUN	TOTAL
BOOKS	1,878	2,498	3,238	926	3,107	2,560	1,863	1,360	378	17,808
INTER-LIBRARY LOAN			3	3		4	1	3		14
FILMSTRIPS	346	149	67	109	201	85	184	88	20	1,249
SOUND FILMSTRIPS	383	368	169	70	243	132	197	139	9	1,710
8MM FILM LOOPS	169	147	97	62	152	46	86	143	21	923
AUDIO-TAPE	22	51	32	32	34	37	51	21	7	287
TRANSPARENCIES	232	13		29	11	13	13			311
CHARTS			1		6		7			14
SLIDES										
STUDY PRINTS	172	8	77	1	86	32		91		467
KITS	4	12	4	6	2	3	3	1	1	36
PICTURES	78	79	52	86	44	1	58	34	1	433
VIDEO-TAPES	118	234	226	244	296	248	179	344	38	1,927
REALIA		4	8		2	3	11		7	35
EQUIPMENT	5	4	12	7	5	2	4	9	10	58
PERIODICALS	2	19	21	25	11	51	165	103	8	410
FILMS			28	16	21	17	15	6	2	105
VILLAGE		146	615	1,862	1,933	739	1,503	1,099	4,037	11,934
TOTAL	3,409	3,732	4,650	3,478	6,154	3,973	4,340	3,446	4,539	37,721